VOL. IV ITHACA, NEW YORK FASC. XI

GENTES HERBARUM

Occasional Papers on the Kinds of Plants

By George H. M. Lawrence

38. Armerias, native and cultivated

Published by The Bailey Hortorium
of The New York State College of Agriculture
at Cornell University
(Mailed at Ithaca Post Office to regular list)
December 30, 1940

248. A TYPICAL PLANT OF A GARDEN THRIFT, *Armeria canescens:* a native of the Balkan and northeastern Mediterranean regions. The plant is suited to the perennial border, the flowers varying in color from white to soft pink.(× ⅓)

Ex.
L. H. Bailey
1-7-1941

ARTICLE 38. ARMERIAS, NATIVE AND CULTIVATED.

In the past four years the writer has devoted considerable time to the study of the genus Armeria. It now seems desirable to publish a preliminary treatment, presenting a brief outline of the genus from a world view-point in order that its units may be seen in true perspective. The present paper, in addition to the analytical keys, is concerned first with the validation of new species-names and nomenclatorial changes, and secondly with an accounting in synonomy of the multitude of names that have been legitimately applied to members of the genus. It is proposed that a subsequent paper will treat and discuss the Armerias of North America in more detail.

The Armerias, or thrifts, as they are commonly known, are found in many habitats from the sandy maritime shores, along some inland estuaries, through many lowland and alpine meadows, on tundras, and in alpine habitats above timber-line, throughout Europe, the northwest coast of Africa, Asia Minor, across Siberia to Alaska, eastward to Labrador and northwestern Newfoundland, the coasts of Greenland and Baffin Land, along the Pacific coast from Point Barrow southward to Monterey County in California, and in South America from northern Chile to Terra del Fuego. Isolated stations are known outside these very general limits of distribution and will be discussed in their proper place.

Several species of Armeria are notable for their horticultural value. Of these brief mention should be made of those adapted to the rock-garden and the perennial border. To the former group belong *Armeria juniperifolia* (*A. cæspitosa*), *A. juncea*, and the dwarf varieties of *A. maritima*. For the perennial border, such taller growing species as *A. plantaginea*, *A. pseudarmeria* (more commonly known as *A. latifolia* or *A. cephalotes*), *A. gaditana*, *A. alliacea* and *A. canescens* and its varieties. Other species are offered to the American trade but, with the possible exception of the dwarf hybrid *A. cæsalpina* (*A. juniperifolia* x *A. maritima* var. *alpina*), they have little to merit them over the above mentioned kinds.

Confusion has existed regarding the correct generic name for the thrifts. A brief outline of its history is in order. Pre-Linnæan botanists generally considered the thrifts and the sea-lavenders as representing two distinct genera. Tournefort (1694) named them Statice and Limonium respectively. However, inasmuch as botanical nomenclature begins with the work of Linnæus, the names of Tournefort are of historical interest but have no claim to priority. Linnæus, in his Species Plantarum (1753), combined these two groups into a single genus, Statice. He treated all the thrifts

known to him as representing a single species, *Statice Armeria*. Fifteen years later Philip Miller separated the two groups, calling the thrifts Statice and the sea-lavenders Limonium. In 1809 Carl Willdenow of the Berlin Botanical Garden, ignoring Miller's earlier generic names, called the thrifts Armeria, and the sea-lavenders Statice. Here confusion began. Subsequently, some botanists and horticulturists identified the thrifts as Statice while others referred to them as Armeria. There was no approach to uniformity of practice until after the late G. C. Druce (1901) demonstrated that Miller's application of the name Statice to the thrifts had priority over Willdenow's name of Armeria. Unfortunately, even after this, many leading continental European botanists and most horticulturists adhered to the Willdenowian name of Armeria, largely because it had been more widely employed in the literature. Despite this evidence of the validity of the name Statice and its unmistakable application by Miller to the thrifts, the present International Committee on Nomenclature has (under authority given it by the International Botanical Congress) conserved the names Armeria for the thrifts and Limonium for the sea-lavenders. The name Statice is rejected as a *nomen ambiguum*. It is obligatory that adherents of the International Rules of Nomenclature follow this arbitrary legislation: accordingly the name Armeria is used for the thrifts in this paper.

Thrifts are perennial plants. All, save a few from the Mediterranean region, are hardy in New York state. They are tufted or cespitose, having linear, lanceolate or oblanceolate leaves in dense basal rosettes. The flowers, whose corollas vary from white to deep magenta-purple, are borne in heads on naked scapes 1 to 30 inches high. These heads offer most of the taxonomic characters employed in identifying the species and their variants.

The head is a complex inflorescence, consisting essentially of a much-condensed, compound, corymbose panicle. This panicle is composed of scorpioid cymules, technically known as spiculæ or cincinnæ. The term spicula (pl. spiculæ) is used in this paper (see Fig. 249). Each head contains from 7 to 15 or more of these spiculæ, each subtended by their own bract, the involucel (not shown in the figure), and the whole group of spiculæ subtended by two or more series of sterile bracts, the involucre. Beneath these sterile involucral bracts a vaginate sheath extends downward about the scape for a short distance.

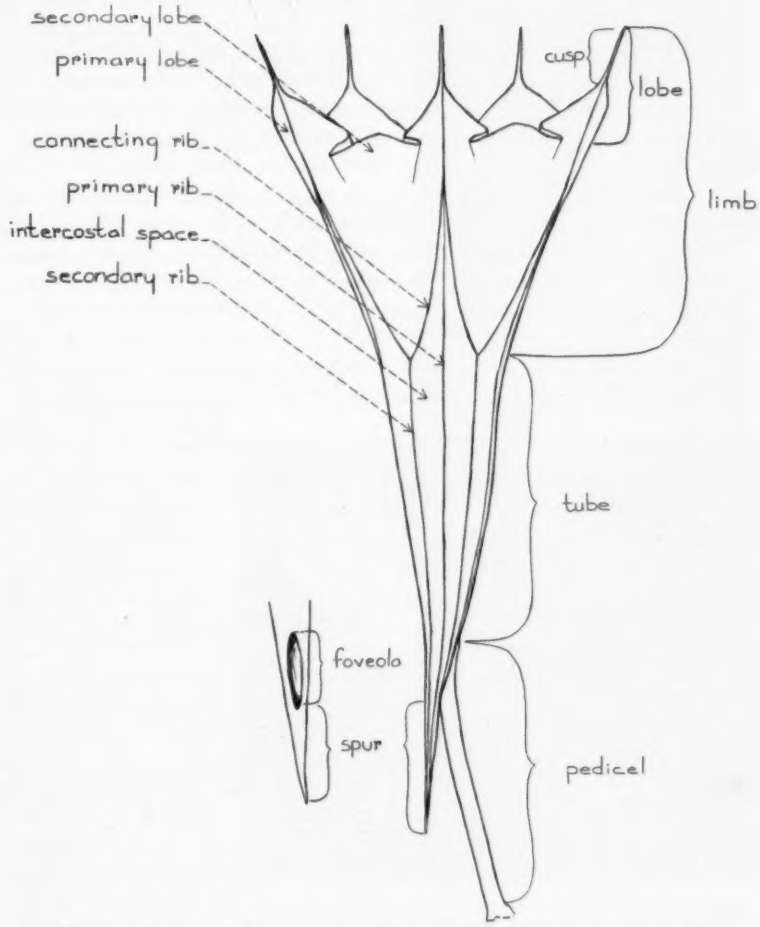
249. Spicula of *Armeria maritima*, interfloral bracts removed. (× 5).

The individual spicula may be sessile (Fig. 249) or borne on a short stalk, when it is said to be stipitate (Fig. 253).

The involucel which subtends the spicula is more commonly referred to as the fruiting bract. Each

flower of the spicula is in turn subtended by a membranaceous interfloral bract. In some species this interfloral bract is vestigial, never developing beyond the primordium.

The mature fruiting calyx of the thrift possesses several characters which, alone or in combination, are of primary taxonomic value. The various parts of the calyx, and the terms applied to them, are indicated in the diagram (Fig. 250). Some authors have placed considerable dependence on the vesture of the calyx-tube ribs. For the most part, this character has



250. Diagram of Armeria calyx, with its attached pedicel. (About × 20).

been unreliable for the separation of many species and is wholly inadequate for the delineation of generic sections. Because of the importance formerly placed on this single character, it is planned to discuss the subject in detail in a subsequent paper. Calyces whose tubes are hairy on both the ribs and the intercostal spaces are termed "holotrichous," those hairy only on the ribs "pleurotrichous." The spur of the calyx, when present, is at the basal extremity of the tube. It extends below the point of pedicel attachment and represents the basal prolongation and cohesion of two, or possibly three, sepals. The presence or absence of this spur is here employed for the separation of the two sections of the genus.

Fully mature fruiting calyces are readily deciduous from their pedicels. At the base of a calyx is a small pit or foveola at the point of union with the pedicel. There is a correlation between the shape of this foveola and the presence or absence of a calyx-spur: obovate to round in ecalcarate (spurless) calyces, and linear-oblong in spurred calyces.

Neither corollas, pistils nor stamens appear to possess characters of value in the separation of the Armeria species.

This taxonomic and horticultural study of Armeria was made possible through the initial encouragement and aid of L. H. Bailey, who provided the facilities for the program and who has been available always for counsel and guidance. K. M. Wiegand of the Botany Department of Cornell University has also contributed considerable time in giving valued counsel, in negotiating loans, and in the preparation of a thesis on which the present paper is based. To each of these the writer's sincere appreciation is here acknowledged.

251. THE SMALLEST OF THE THRIFTS, *Armeria juniperifolia*. Native in the Guadarrama Mountains of Spain. (× 1). See p. 408 for synonomy.

This paper is the result of a critical study of a living collection of over 500 plants and a large assemblage of herbarium specimens. The living collection represented 54 "trade" or "label" names and 110 seed lots. Of these plants, more than two-

thirds are now incorporated in the herbarium of the Bailey Hortorium and the remainder left in the garden for subsequent study. This collection, assembled from the stocks of botanic gardens and commercial firms of North America and Europe, has compensated, in part, for the writer's lack of field knowledge of the species as they occur in their native habitats and has prevented this paper from being merely an herbarium study. It also provided an opportunity to study the ranges of variation of the several populations while growing under the uniform conditions of a single habitat. For the purpose of the herbarium study, nearly 4,000 specimens were assembled simultaneously at Cornell University.

The herbarium collections studied were obtained on loan or by gift from the following institutions supplementing the collections of the herbaria of the Botany Department and Bailey Hortorium at Cornell University:

University of California, Berkeley
Jardin Botanique de l'Etat, Brussels
Gray Herbarium, Cambridge, Massachusetts
Field Museum of Natural History, Chicago
Colorado College, Colorado Springs
Universitetets Botaniske Museum, Copenhagen
Rijks Herbarium, Leiden
New York Botanical Garden, New York
Universitetets Botaniske Museum, Oslo
National Herbarium of Canada, Ottawa
Academy of Natural Sciences, Philadelphia
National Herbarium, Prague
Missouri Botanical Garden, St. Louis
United States National Herbarium, Washington, D.C.

252. A REPRESENTATIVE SPECIMEN OF *Armeria pungens*. Most of the thrifts available under this name are properly referred to other species. Note the much elongated leafy stems characteristic of the plant. This is a maritime species of the Iberian Peninsula, the above plant being grown from seed collected in Portugal. (× ¼). See p. 397 for synonomy.

To the curators of these institutions, and to the librarians of the several libraries consulted, the writer takes this opportunity of acknowledging his indebtedness and expresses thanks and appreciation for their assistance and cooperation. He is particularly indebted to Prof. H. Humbert of the National Museum of Paris for the gift to the Bailey Hortorium of nearly 300 valuable collections of Armeria; to Prof. Robert Pilger of Berlin-Dahlem for the notations, sketches and photographs, made at the writer's request, of Willdenow's types; to Prof. Nikolajs Malta of Riga, Latvia and Steindor Steindorsson of Akureyri, Iceland, for contributions of valued representatives of the genus, and to the numerous other American and European botanists who have contributed materially to the study.

KEY TO THE SECTIONS AND SPECIES OF THE KNOWN ARMERIAS

I. Calyx-base prolonged 1.5-4.0 mm. beyond point of pedicel insertion into a distinct spur; foveola always elongate-elliptic to linear.....Sect. MACROCENTRON

I. Calyx-base not prolonged more than 1.0 mm. beyond point of pedicel insertion; spur absent; foveola ovate, obovate to circular, not as above.
.....SECT. PLAGIOBASIS, p. 399

I. Sect. *Macrocentron* Boiss. in DC. Prod. xii, 674 (1848).

1. Interfloral bracts absent or rudimentary.
   2. Leaves broadly lanceolate to oblong-lanceolate, usually 5-7 nerved: outer involucral bracts triangular-acuminate to triangular-cuspidate, rarely ovate-orbicular and if so longer than the inner involucral bracts .....1. *A. gaditana*
   2. Leaves narrowly lanceolate to linear, usually 1-nerved: outer involucral bracts more or less obtuse or much shorter than the inner ones and only rarely equalling the head.
      3. Involucral bracts broadly white-membranaceous along margin, coriaceous, oblong: leaves fasciculate, 1.5-3.5 mm. wide.....2. *A. pungens*
      3. Involucral bracts thin and scarious, not coriaceous nor conspicuously white margined: leaves filiform and not fasciculate, 0.6-1.2 mm. wide.
         4. Bracts of involucre glabrous: calyx-tube vestured on ribs only. .....3. *A. macrophylla*
         4. Bracts of involucre pubescent usually appressed-pubescent: calyx-tube usually vestured on and between the ribs.....4. *A. pinifolia*

1. Interfloral bracts present, usually equalling or exceeding the calyx-tube.
   5. Outer involucral bracts ovate-orbicular and slightly acuminate: interfloral bracts pubescent, at least on basal half.
      6. Leaves narrowly canaliculate, 1 nerved.....5. *A. Rouyana*
      6. Leaves linear-lanceolate, 3-7 nerved.....6. *A velutina*
   5. Outer involucral bracts ovate-lanceolate, acuminate to elongate-cuspidate: interfloral bracts glabrous.
      7. Spiculæ stipitate; leaves dimorphic.
         8. Calyx-tube vestured only on primary ribs.....7. *A. cariensis*
         8. Calyx-tube vestured on both primary and secondary ribs...8. *A. rumelica*
      7. Spiculæ sessile; leaves uniform.
         9. Leaves oblong-lanceolate, usually 5-7 nerved, often abruptly attenuate along basal third.
            10. Calyx-tube holotrichous, or if pleurotrichous, secondary ribs densely vestured; intercostal spaces usually narrower than ribs.....9. *A. berlengensis*
            10. Calyx-tube pleurotrichous or entirely glabrous, secondary ribs ciliate or glabrous, nerve densely vestured: intercostal spaces wider than ribs.....10. *A. mauritanica*

9. Leaves linear to linear-lanceolate, 1-3 nerved; when lanceolate, long attenuate along basal third.
   11. Plant villous-pubescent.....11. *A. cinerea*
   11. Plant glabrous.....12. *A. Welwitschii*

The Species and Varieties of Armeria

I. *Section Macrocentron*

1. **Armeria gaditana** Boiss. in DC. Prod. xii, 675 (1848).

Key to varieties of *gaditana:*

1. Outer involucral bracts triangular, acuminate.
   2. Leaves 1.5-2.8 cm. wide: calyx-pedicel 1/6 to 1/4 as long as calyx-tube.
      3. Leaf margins flat and entire: interfloral bracts absent.....a. *typica*
      3. Leaf margins undulate and ciliate: interfloral bracts rudimentary.....b. var. *simplex*
   2. Leaves 0.6-1.2 cm. wide; calyx-pedicel 1/10 to 1/6 as long as calyx-tube.....c. var. *spinulosa*
1. Outer involucral bracts ovate-orbicular.....d. var. *Boissieriana*

a. **A. gaditana,** typical element.
S. pseudo-armeria Cav., Icones i, 38 (1791), non Murr.
S. gaditana Jahandiez & Maire, Cat. Plant. Maroc. iii, 565 (1934).

† b. **A. gaditana** var. **simplex** stat. nov.
A. simplex Pomel, Nouv. Mat. l. Atl. p. 132 (1874).

† c. **A. gaditana** var. **spinulosa** stat. nov.
A. spinulosa DC. Prod. xii, 675 (1848).

† d. **A. gaditana** var. **Boissieriana** stat. nov.
A. Boissieriana Cosson, Notes Crit. p. 44 (1849).

2. **Armeria pungens** Hoffmgg. & Link, Fl. Port. i, 439, t. 76 (1809).
S. pungens Link, in Schrad. Journ. p. 60 (1800).
S. fasciculata Vent., Jard. Cels. t. 88 (1803).
A. fasciculata Willd., Enum. Plant. Hort. Berol. i, 334 (1809).
A. pungens Hoffmgg. & Link var. *major* Dav. in Bol. Soc. Brot. vi, 163 (1889).
A. fasciculata Willd. var. *intermedia* Dav. l.c.

3. **Armeria macrophylla** Boiss. & Reut., Pugill. Plant. Nov. p. 100 (1852).
A. bætica Boiss. var. *stenophylla* Boiss. in DC. Prod. xii, 677 (1848).

4. **Armeria pinifolia** Hoffmgg. & Link, Fl. Port. i, 437, t 75 (1809).
S. pinifolia Brot., Fl. Lusit. i, 486 (1804).
A. pinifolia Hoffmgg. & Link var. *glabra* Boiss. in DC. Prod. xii, 675 (1848).

5. **Armeria Rouyana** Dav. in Bol. Soc. Brot. vi, 166 (1889).

6. **Armeria velutina** Welw. ex Boiss. & Reut., Pugill. Plant. Nov. pp. 100-101 (1852).

7. **Armeria cariensis** Boiss. in DC. Prod. xii, 677 (1848).
Armeria sancta Janka, in Termeszetrajzi Furzetek, iv, 165 (1882).

8. **Armeria rumelica** Boiss. in DC. Prod. xii, 677 (1848).

Key to varieties of *rumelica:*

1. Foveola oblanceolate.
   2. Leaves glabrous, inner ones usually 2-3 mm. wide and to 18 cm. long.
      3. Corolla lilac to violet; pedicel of spicula 2-5.3 mm. long; head 2.0-3.5 cm. across; outer involucral bracts shorter than the inner ones...a. *typica*

3. Corolla ochroleucus; pedicel of spicula 0.75-2.0 mm. long; head 1.5-2.5 cm. across; outer involucral bracts often longer than inner ones and sometimes longer than head.....b. var. *Tempskyana*

2. Leaves ciliate, often puberulous; inner ones usually 0.75-1.5 mm. wide and to 10 cm. long.

4. Corolla rose-violet.....c. var. *rhodopæa*

4. Corolla white.....d. var. *Adamovicii*

1. Foveola obovate to oblong.....e. var. *pseudocanescens*

a. **A. rumelica,** typical element .

A. cariensis Boiss. var. *thessala* Boiss. Fl. Orient. iv, 874 (1879).
A. cariensis Boiss. var. *rumelica* Boiss. l.c.
S. rumelica Deg. & Dorf. in Denk. Akad. Wiss. Math.-Nat. Wien. lxiv, 734 (1897).
A. rumelica Boiss. var. *genuina* sensu Novak in Comm. Reg. Soc. Sci. Bohem. Math.-Nat., Prague xxviii, 12 (1939).
A. rumelica Boiss. var. *genuina* sensu Novak f. *typica* sensu Novak l.c. p. 14.
A. rumelica Boiss. var. *genuina* sensu Novak f. *setacea* Novak l.c.
A. rumelica Boiss. var. *genuina* sensu Novak f. *isophylla* Stojanov & Jordanov ex Novak l.c.

b. **A. rumelica** var. **Tempskyana** Vandas, Reliq. Forman. p. 502 (1909).

S. rumelica Deg. & Dorf. var. *Tempskyana* Deg. & Dorf. in Denk. Akad. Wiss. Math.-Nat. Wien. lxiv, 734 (1897).
A. cariensis Boiss var. *rumelica* Boiss. subvar. *Tempskyana* Bornmuller, in Denk. Akad. Wiss. Math.-Nat. Wien. p. 98 (1928).

c. **A. rumelica** var. **rhodopæa** Beck. in Ann. Akad. Nat.-Hist. Hofmus. Wien xiii, I: 20 (1898).

A. majellensis Boiss. var. *rhodopæa* Velen. in Sitz. Bohm. Ges. Wiss., Prague no. 29, p. 25 (1894).
S. rumelica Deg. & Dorf. var *rhodopæa* Deg. in Denk. Akad. Math.-Nat. Wiss. Wien. lxiv, 734 (1897).
A. rhodopæa Velen. l.c. no. 27, p. 14 (1902).
A. rumelica Boiss. f. *rhodopæa* Hayek, Prod. Fl. Balcan. ii, 12 (1928).
A. cariensis Boiss. var. *rumelica* Boiss. subvar. *rhodopæa* Bornm., Beitr. Fl. Mazed. iii, 98 (1928).
A. rumelica Boiss. var. *græca* Stojanov & Stof., non Beck., Fl. Bulg. Ed. 2, p. 805 (1933).

d. **A. rumelica** var. **Adamovicii** Novak, in Comm. Reg. Soc. Sci. Bohem., Prague xxviii, 19 (1939).

A. argyrocephala Podpera non Wallr. in Verh. Akad. Zool.-Bot. Ges. Wien. lii, 673 (1902).
A. Adamovicii Halacsy, in Quest. Bot. Zeit. Wien. liv, 279 (1906).
A. argyrocephala Wallr. var. *græca* Davidov non Beck. in Trav. Soc. Bulg. Sci. Nat. viii, 110 (1915).
A. rumelica Boiss. var *Tempskyana* Deg. & Dorf. f. *Adamovicii* Hayek, Prod. Fl. Balcan. ii, 12 (1928).

e. **A. rumelica** var. **pseudocanescens** Novak, in Comm. Reg. Soc. Sci. Bohem., Prague xxviii, 15 (1939).

9. **Armeria berlengensis** Dav. in Bol. Soc. Brot., ii, 24 (1884).

Key to varieties of *berlengensis:*

1. Leaves, scape and involucral bracts glabrous: corolla deep rose-pink.....a. *typica*
1. Leaves, scape and involucral bracts pubescent: corolla white or pale rose b. var. *villosa*

b. **A. berlengensis** var. **villosa** Dav. l.c. p. 25.

10. **Armeria mauritanica** Wallr., Beitr. i, 217 (1844).

Key to varieties of *mauritanica:*

1. Leaves acute, usually 5-nerved, broadly lanceolate.
   2. Heads 3.4-4.6 cm. across ..... a. *typica*
   2. Heads 2.6-3.2 cm. across ..... b. var. *minor*
1. Leaves obtuse, often mucronulate, usually 7-nerved, obovate to spatulate ..... c. var. *amplifoliata*

a. **A. mauritanica,** typical element.

A. bætica Boiss. in Voy. Bot. Espag. Suppl. p. 749 (1845) exclusive of var. *stenophylla* Boiss. (l.c.)
A. mauritanica Wallr. var. *ciliolata* Boiss. in DC. Prod. xii, 677 (1848).
A. mauritanica Wallr. var. *calva* Boiss. l.c.
A. arcuata Welw. ex Boiss. & Reut., Pugill. Plant. Nov. p. 101 (1852).

b. **A. mauritanica** var. **minor** Batt. & Traut., Fl. d' Algiers p. 736 (1890).

† c. **A. mauritanica** var. **amplifoliata** stat. nov.

A. amplifoliata Pau, no. 513 in Exc. "Dr. Font Quer—Iter Maroccanum, 1930."
S. amplifoliata Maire, in Jahandiez & Maire, Cat. Plant. Maroc. iii, 565 (1934).

11. **Armeria cinerea** Boiss & Welw., ex Boiss. & Reut., Pugill. Plant. Nov. p. 101 (1852).

12. **Armeria Welwitschii** Boiss. in DC. Prod. xii, 676 (1848).

S. Armeria Linn. sensu Brot., Fl. Lusit. i, 489 (1804), quoad pl. maritimam.
A. Welwitschii Boiss. var. *stenophylla* Dav. in Bol. Soc. Brot. vi, 167 (1889) and in Dav., Plumb. Port. p. 27, 1889.
A. Welwitschii Boiss. var *longibracteata* Dav., l.c.
S. Welwitschii G. Sampaio, Herb. Portug., 100 (1913).

II. Sect. *Plagiobasis* Boiss. in DC. Prod. xii, 677 (1848).

1. Spiculæ sessile (see Fig. 249).
   2. Leaves all similar in outline, the outer leaves not shorter and wider than inner leaves.
      3. Leaves narrowly linear, 1-nerved.
         4. Length of the leaves 2.5 cm. or more (if less, flat or canaliculate in cross-section and acute or obtuse, not pungent): scapes usually 8-70 cm. long ..... 13. *A. maritima*
         4. Length of the leaves 2.0 cm. or less (if more, subtriquentrous to triangular in cross-section and pungently mucronate): scapes 0.5-8.0 cm. long ..... 14. *A. juniperifolia*
      3. Leaves lanceolate to broadly oblong-lanceolate, usually attentuate along basal third.
         5. Involucral bracts, fruiting bracts and sheath pubescent; leaves 1.8-2.0 cm. long ..... 15. *A. Langeana*
         5. Involucral bracts, fruiting bracts and sheath glabrous; leaves usually more than 2.5 cm. long.
            6. Calyx-lobes truncate or nearly so, abruptly mucronate; leaves broadly lanceolate to oblong lanceolate, usually 1.2-2.0 cm. across at the widest point, margin narrowly scarious. ..... 19. *A. pseud-armeria*
            6. Calyx-lobes triangular-acuminate; leaves narrowly lanceolate, usually 0.4-0.8 cm. across at the widest point, margin rarely scarious; sheath 2.0-5.0 cm. long.
               7. Calyx-cusp twice as long as the laminated portion of the lobe or nearly so; leaves ciliate on margin.... 18. *A. longiaristata*
               7. Calyx-cusp only as long as laminated portion of lobe, or nearly so; leaves not ciliate on margin.
                  8. Inner involucral bracts broadly ovate, obtuse or slightly retuse-mucronulate ..... 17. *A. alliacea*
                  8. Inner involucral bracts ovate elliptic, sharply cuspidate or acute to acuminate ..... 16. *A. plantaginea*

2. Leaves dimorphic; outer ones much shorter and wider than inner ones.
   9. Outer involucral bracts longer than inner ones; outer leaves frequently denticulate-undulate along margin.....20. *A. denticulata*
   9. Outer involucral bracts shorter than or equal to inner ones; outer leaves rarely undulate and then only so in *A. canescens leucantha*.
      10. Inner leaves of rosette 1.2-4.0 mm. wide (occasionally 0.8-2.0 mm. wide in *A. canescens leucantha*) flat, glabrous: heads usually 2.0-2.8 cm. wide.....21. *A. canescens*
      10. Inner leaves of rosette 0.3-1.2 mm. wide, canaliculate (at least along lower half), often ciliate or puberulous to hispidulous: heads 0.8-2.0 cm. wide.
         11. Calyx-lobes truncate to ovate-truncate: leaves puberulous to hispidulous at least beneath.
            12. Cusp 1.2-2.8 mm. long, lobes truncate to ovate-triangular.....22. *A. eriophylla*
            12. Cusp 0.2-0.4 mm. long, lobes consistently truncate.....23. *A. quichiotis*
         11. Calyx-lobes ovate-triangular to triangular, cusp usually 0.4-1.2 mm. long: leaves ciliate to glabrous, not puberulous.
            13. Bracts of inner involucre mucronate, acuminate or acute.
               14. Calyces holotrichous; cusp 1.0-1.4 mm. long: outer involucral bracts lanceolate.....24. *A. lanceobracteata*
               14. Calyces pleurotrichous; cusp 0.3-0.8 mm. long: outer involucral bracts ovate.....25. *A. littoralis*
            13. Bracts of inner involucre obtuse, rarely mucronulate.
               15. Inner involucral bracts twice as long as outer or nearly so; lobes of calyx ovate-triangular, usually long aristate.....26. *A. sardoa*
               15. Inner involucral bracts as short as the outer ones or nearly so; lobes of calyx triangular, abruptly aristate.
                  16. Scapes 5-15 cm. long, often curved and ascending at base: inner leaves 1.5-3.0 cm. long.....27. *A. juncea*
                  16. Scapes 18-46 cm. long straight and stiff: inner leaves 4.5-12.0 cm. long.....*A. filicaulis*

1. Spiculæ stalked (see insert, Fig. 253).
   17. Leaves linear or narrowly linear-lanceolate, not oblong-lanceolate and rarely exceeding 2.5 mm. in width.
      18. Scape strongly glandular or pustulate, always glabrous, stiffly erect: leaves glabrous throughout.....29. *A. Bubanii*
      18. Scape eglandular (not pustulate), glabrous or pubescent, often ascending or laxly erect: leaves rarely entirely glabrous, and when seemingly so are pubescent along lower side of midrib or ciliate toward base.
         19. Calyx-lobes rounded to truncate, 0.6-1.2 mm. long; cusp abruptly mucronulate, 0.3-0.6 mm. long; calyx-pedicel 2.4-4.0 mm. long with distal end spreading; involucral and interfloral bracts pubescent to puberulent.....30. *A. portensis*
         19. Calyx-lobes triangular, aristate to cuspidate, rarely less then 1 mm. long; calyx-pedicel 1.0-2.5 mm. long, distal end not spreading; involucral and interfloral bracts glabrous.
            20. Leaves 1.6-2.8 mm. wide, glabrous except for line of pubescence along lower side of midrib; head nearly spherical, 1.6-2.2 cm. wide, outer involucral bracts oblong-lanceolate, acute to cuspidate.....31. *A. pubinervis*
            20. Leaves usually 0.6-1.5 mm. wide (when wider they are also either ciliate or finely pubescent throughout): head hemispherical, 0.6-1.2 cm. wide, outer involucral bracts ovate to lanceolate, acute.....32. *A. leucocephala*

17. Leaves broadly lanceolate to oblong-lanceolate, usually exceeding 2.5 mm. in width.
    21. Scape and leaves villous; leaves 1-3 cm. long ..... 33. *A. villosa*
    21. Scape and leaves glabrous (leaves rarely ciliate, never villous); leaves usually 4-12 cm. long.
        22. Inner involucral bracts mucronate: calyx 4.6-5.6 mm. long: leaves not exceeding 5 mm. in width: corolla white or very pale pink. ..... 34. *A. Sennenii*
        22. Inner involucral bracts obtuse: calyx 6.5-9.5 mm. long: leaves often 8.5 mm. wide: corolla rose-pink ..... 35. *A. Morisii*

13. **Armeria maritima** Willd., Enum. Plant. Hort. Berol, p. 333 (1809).

This species, from the viewpoint of the number and diversity of the populations embraced, is the largest and certainly the most polymorphic of the genus. Many binomials and trinomials are reduced to synonomy; subsequent recognition of some of them as varieties or formae may be justifiable, but the study required for such delineations entails more field experience and material than is now available. There appears to be no evidence of sufficiently complete morphological discontinuity within these polymorphic populations to warrant the specific recognition of the lesser units. That they represent a natural, phylogenetic and homologous series of biotypes seems to be the only conclusion compatible with the facts.

The name for the species complex has been interpreted variously by Petri, Rosenvenge, Skottsberg, Gams et al. All of the above authors, except Skottsberg, have treated *A. maritima* Willd. as a variety of *A. vulgaris* Willd., while Skottsberg made the varietal combination under *A. elongata* Koch. It would appear that each of these combinations were invalid, because although no type specimen has been located of Miller's *Statice maritima* as published in his Gardener's Dictionary, ed. 8, 1768, there is no question but what the plant he described was the same as Willdenow's *Armeria maritima* of 1809. When these two entities are combined, the name for the plant as a species must then be *A. maritima* (Mill.) Willd. (Art. 56 of the International Rules).

As a species, *A. maritima* (*sensu latiore*) is quite distinct from others of the genus. The only other linear- and monomorphic-leaved species having sessile spiculæ is *A. juniperifolia* from which *A. maritima* is usually readily distinguished by its much larger size and flat leaves. Certain high altitude forms of var. *alpina* have greatly reduced leaves which come within the limits of some forms of *A. juniperifolia*, but unlike the latter the leaves are flat and obtuse or at least never pungently mucronulate. Superficially, *A. pubinervis* resembles typical *A. maritima* and examination of the spiculæ is necessary to separate them; i.e. distinctly stalked in the former and sessile in the latter. A similar difference exists between varieties of *A. leucocephala* and *A. maritima*.

Key to the varieties of *maritima:*

1. Outer involucral bracts usually one-half as long as inner ones or less; inner involucral bracts obtuse: leaves flat rarely exceeding 6 cm. in length, straight and not recurved.
    2. Bracts of outer involucre triangular, usually tinged rose-purple, at least at apices: leaves somewhat fleshy and often tinged rose-purple at apices or marginally: calyces holotrichous or pleurotrichous, base usually narrowly and abruptly attenuate below foveola, ribs distinct, lobes aristate ..... c. var. *sibirica*
    2. Bracts of involucre oblong to obovate, inner ones very broadly so, whitish or pale cream-colored, never tinged rose-purple: leaves not fleshy nor tinged as above, apices often distinctly mucronulate: calyces holotrichous, base obtuse, ribs indistinct, lobes nearly exaristate. *h.* var. *maroccana*

1. Outer involucral bracts more than one-half as long as inner ones: leaves flat, recurved or slightly contorted and canaliculate, usually 3-18 cm. long.
    3. Calyx-tube glabrous: leaves 5 cm. long or less, usually 2.0-3.5 mm. wide ..... e. var. *interior*
    3. Calyx-tube vestured, at least on the vertical ribs: leaves usually more than 4 cm. long, but if shorter, 1.8 mm. wide or less.

4. Scapes covered with minute pustular glands giving a minutely warty appearance (see var. *alpinifolia*). usually glabrous*; calyx-tube shorter than the calyx-limb; intercostal spaces and connecting ribs usually glabrous, the former usually much narrower than the ribs, hairs of mature fruiting calyces often 0.6 mm. long or more. (Plants of South America).
   5. Scape as narrow as leaves or narrower; outer bracts linear-oblong, linear-triangular or ovate, acute or obtuse.
      6. Heads 1.5-2.0 cm. across; intercostal spaces of calyx-tube usually glabrous; calyx-limb not more than twice as long as tube; outer involucral bracts never as long as head.....p. var. *andina*
      6. Heads 2.3-3.0 cm. across; intercostal spaces of calyx-tube often pubescent; calyx-limb more than twice as long as tube; outer involucral bracts as long as head or nearly so.....t. var. *macloviana*
   5. Scape wider than leaves; outer bracts usually ovate, acute to cuspidate.
      7. Leaves strongly canaliculate for their entire length, often with ventral sides folded together, usually curved, 0.3-0.6 mm. wide; margin usually glabrous or occasionally ciliate.....r. var. *curvifolia*
      7. Leaves flat or canaliculate along basal half, usually straight, 0.6-2.0 mm. wide; margins usually ciliate.
         8. Scape glabrous: leaves rarely exceeding 1.0 mm. wide, apex acute. .....q. var. *patagonica*
         8. Scape puberulent: leaves usually 1.4-2.0 mm. wide, apex obtuse. .....s. var. *majellanica*

4. Scapes not covered with minute pustular glands, or if so only on the basal third (except in var. *alpinifolia* whose scape is glandular-pustular throughout), glabrous or pubescent; calyx-tube often as long as the limb, ribs setose or densely tomentose with the hairs of mature fruiting calyces rarely reaching 0.5 mm. in length, intercostal spaces glabrous or pubescent and usually as wide or wider than the ribs. (Plants of the northern hemisphere).
   9. Inner involucral bracts obtuse; calyces with connecting ribs pubescent and intercostal spaces usually pubescent; scapes rarely exceeding 18 cm. in length, erect; sheath shorter than width of head.....d. var. *labradorica*
   9. Inner involucral bracts acute, mucronate or obtuse; calyces with intercostal spaces glabrous or pubescent, but when pubescent the inner involucral bracts are usually mucronulate to mucronate and rarely obtuse; scapes often more than 20 cm. long, often weakly erect or ascending; sheaths usually longer than width of head (except in var. *maria*, and sometimes in vars. *typica* and *purpurea*.
      10. Involucral bracts, fruiting bracts and sheath villous.....var. *pubigera*
      10. Involucral bracts, fruiting bracts and sheath glabrous.
         11. Outer involucral bracts usually mucronate; inner involucral bracts mucronate to mucronulate and occasionally obtuse (when obtuse the outer ones are mucronate), longer than the outer ones: leaves usually 1.0 mm. wide or less (sometimes wider in cultivated specimens), margins glabrous or ciliate, surfaces glabrous to pubescent: calyces with intercostal spaces pubescent or glabrous.
            12. Scapes erect, not much wider than leaves or occasionally narrower, glabrous or pubescent; sheath usually as long as head is wide or longer.....a. *typica*
            12. Scapes usually weak and ascending, about twice as wide as leaves, glabrous; sheath one-half to two-thirds as long as head is wide.....i. var. *maria*
         11. Outer involucral bracts obtuse, acute, or cuspidate, but not mucronate; inner involucral bracts acute or obtuse: leaves usually 1.5 mm. wide or more (specimens from high altitudes occasionally have narrower leaves), flat: calyces with intercostal space glabrous.
            13. Bracts of outer involucre equalling or exceeding the head and always longer than the inner involucral bracts.

---

* When puberulous (as in var. *majellanica*) the limb is twice as long as the calyx-tube.

14. Cusp of calyx-lobes 1.3-2.2 mm. long: leaves often sharply canaliculate: scapes rarely exceeding 1.0 mm. in diameter and usually less than one-half as wide as leaves, usually 7.15 cm. long.....h. var. *ruscinonensis*
14. Cusp of calyx-lobes 0.2-0.8 mm. long: leaves flat: scapes usually 1.0 mm. wide or more and more than one-half as wide as leaves, usually 15-40 cm. long (rarely 10-55 cm. long).
    15. Scape usually exceeding 25 cm. in length; head rarely more than 2.0 cm. wide; outer bracts linearlanceolate to linear-oblong; leaves acute, often ciliate, rarely exceeding 2.5 mm. in width. .....m. var. *elongata*
    15. Scape 10-30 cm. long; head usually exceeding 2.0 cm. across; outer bracts broadly triangular-acuminate to oblong-acute; leaves obtuse, rarely ciliate, often exceeding 2.5 mm. in width. .....l. var. *californica*

13. Bracts of outer involucre ovate, acute or cuspidate, usually shorter than or rarely equalling the head and shorter than the inner involucral bracts.
    16. Calyx-lobes obtuse to truncate, 0.1-0.4 mm. in length; cusp 0.1-0.2 mm. long, occasionally barely perceptible; tube slightly longer than limb, ribs lightly covered with short stringose hairs; outer involucral bracts often strongly cuspidate; scape exceeding 30 cm. in length; sheath one- and one-half times as long as head is wide or longer. .....o. var. *barcensis*.
    16. Calyx-lobes triangular, 0.6-1.7 mm. long; tube rarely longer than limb, usually somewhat shorter, ribs densely or sparsely pubescent; outer involucral bracts rarely cuspidate; scape 4-40 cm. long; sheath usually less than one and one-half times as long as head is wide.
        17. Leaves 1.0-4.5 mm. wide, acute to bluntly obtuse, rarely exceeding 8 cm. in length, glabrous or vestured on dorsal side along midrib: calyx-tube with intercostal spaces glabrous and distinctly wider than the pubescent vertical ribs; scape glabrous.
            18. Scape prominently glandular-pustular along basal half: leaves ciliate: head 1.2-1.6 cm. across; outer involucral bracts cuspidate.....k. var. *alpinifolia*
            18. Scape smooth, not glandular-pustulate: leaf-margins eciliate, often white scarious and remotely undulate: head 1.8-2.8 cm. across (sometime smaller in high alpine forms); outer involucral bracts acute or acutish.....j. var. *alpina*
        17. Leaves rarely exceeding 1.4 mm. in width, and if so, are more than 12 cm. in length, ciliate or eciliate: calyx-tube with intercostal spaces glabrous and as narrow or narrower as the ribs, secondary ribs often as densely pubescent as the primary ones; scape glabrous or tomentose, usually as wide as leaves or wider.
            19. Outer involucral bracts ovate to obovate, obtuse; calyx-cusp 0.4-0.6 mm. long.....g. var. *purpurea*
            19. Outer involucral bracts broadly lanceolate, acute; calyx-cusp absent.....f. var. *ambifaria*

a. **A. maritima,** typical element.

S. Armeria Linn. pro parte, Sp. Pl. Ed. 1, p. 274 (1753).
Linnæus' description and his citations include the plants treated here as vars. *typica*, *purpurea* and *elongata*. A photograph of the Linnæan specimen, together with notes made of it by Druce (1901), place it as *A. maritima elongata* of this paper.

S. maritima Mill., Gard. Dict. Ed. 8, n. 3 (1768).
Although extensive correspondence has failed to locate any specimens of Miller's thrifts, the illustrations and figures cited, together with stated habitat, leave little doubt as to the probable identity of the plant he described under this name.

S. capitata Lam., Fl. Franc. iii, 63 (1778).

S. Armeria Linn. var. *pubescens* Sowerby, Engl. Bot. t. 226 (1795).

S. cæspitosa Poiret, in Lam. Encyc vii, 396 (1806), non Cav.

A. maritima Willd., Enum. Plant Hort. Berol. p. 333 (1809).

S. linearifolia Laterrade, Fl. Bordel. Ed. 2, p. 189 (1821).

A. pubescens Link, in Repert. Nat. Curios. Berol. p. 180, (1829).
S. elongata Hoffm. var. *pubescens* Koch, Syn. Fl. Germ. p. 595 (1837).
A. maritima Willd. ssp. *anglica* Wallr. Beitr. i, 186 (1844).
A. maritima Willd. ssp. *anglica* Wallr. var. *sylvestris* Wallr. l.c.
A. maritima Willd. ssp. *anglica* Wallr. var. *hortensis* Wallr. l.c.
A. maritima Willd. ssp. *belgica* Wallr. l.c.
A. maritima Willd. ssp. *gallica* Wallr. l.c. p. 187.
A. maritima Willd. ssp. *itala* Wallr. l.c.
A. maritima Willd. ssp. *germanica* Wallr. l.c.
A. campestris Wallr. var. *Linkii* Wallr., l.c. p. 204.
A. Halleri Wallr., l.c. p. 194.
Subsequent studies of the local populations of this plant may warrant its varietal recognition. The plants are presumably distinguished from typical forms of *A. maritima* by their ciliate canaliculate leaves. The writer has seen many specimens with flat ciliate leaves and an approximately equal number with glabrous canaliculate leaves, but proportionately fewer whose leaves were both ciliate and canaliculate. Wallroth's type is represented by a single collection of six sheets, all of which have been examined. The type locality is (l.c.) on the western slopes of the Hartz Mts., and more especially in the vicinity of Hertzberg, Saxony. Several botanists have placed this plant in synonymy under *A. alpina* Willd., and in doing so were doubtlessly influenced largely by the fact that it is a plant of central Germany, growing at altitudes of 500-800 m., and not in maritime habitats. Its narrow obtuse leaves, narrow intercostal spaces and relatively small heads clearly place it in var. *typica* and not in var. *alpina*.
A. expansa Wallr., l.c. p. 197.
A. pubigera Boiss. β *scotica* Boiss. in DC. Prod. xii, 678 (1848).
A. duriuscula Bab. in Ann. Nat. Hist. Ser. II., iii, 436 (1849).
A. vulgaris Willd. III *maritima* Petri, Gen. Arm. p. 41 (1863).
A. vulgaris Willd. III *maritima* Petri. (b) *longiinvolucrata* Petri l.c.
A. vulgeris Willd. II *elongata* Petri (c) *Halleri* Petri l.c. p. 40.
A. vulgaris Willd. II *elongata* Petri (d) *Rugica* Petri l.c.
A. vulgaris Willd. II *elongata* Petri (e) *Eifeliaca* Petri l.c.
A. vulgaris Willd. II *elongata* Petri (f) *calaminaria* Petri l.c.
A. vulgaris Willd. II *elongata* Petri (β) *pubescens* Petri l.c.
A. vulgaris Willd. II *elongata* Petri β pubescens Petri (b) *longiscapa* Petri l.c.
A. maritima Willd. var. *pubescens* Bab. Man. Brit. Bot. Ed. 3. p. 252 (1851).
A. vulgaris Willd. var. *planifolia* Syme, in Sowerby's Engl. Bot., Ed. 3 viii, 158 (1867).
A. maritima Willd. var. *maritima* Bab., Man. Brit. Bot. Ed. 6, p. 681 (1867).
A. maritima Willd. var. *duriuscula* Bab. l.c.
A. vulgaris Willd β *elongata* Marss. (2) *pubescens* Marss., Fl. Neu-pom p. 379 (1869).
A. vulgaris Willd. γ *intermedia* Marrs. l.c.
A. vulgaris Willd. γ *intermedia* Marss. (2) *purpurea* l.c.
A. vulgaris Willd. β *maritima* Marss. l.c.
A. vulgaris Willd. β *maritima* Marrs. (1) *genuina* sensu Marrs. l.c.
A. vulgaris Willd. β *maritima* Marss. (2) *pubescens* Marss. l.c.
A. vulgaris Willd. β *maritima* Marss (3) *glabra* Marss. l.c.
A. maritima Wiild. f. *typica* sensu Blytt, Norges Flora Del II, Kristiana (1874).
A. maritima Willd. var. *planifolia* Bab. Man. Brit. Bot. Ed. 8, p. 295 (1881).
A. vulgaris Willd. var. *maritima* Rosen., Meddel ϕm Grϕnl. iii, (1891).
A. maritima Willd., f. *Laucheana* Voss. Vilm. Blumengarten. Ed. 3, 617 (1896).
A. vulgaris var. *Laucheana* Voss. ex Bailey, Stand. Cycl. Hort. i, 395 (1914).
S. Armeria Linn. var. *Laucheana* Hubb. ex Bailey in Rhodora, xviii, 157 (1916).
S. Armeria Linn. var. *variegata* Hubb. ex Bailey, l.c.
A. elongata Koch var. *maritima* Skottsberg, in Kungl. Svensk. Vetens. Akad. Handl. lvi, 285 (1916).
A. bottendorfensis K. Wien, in Der Naturforschen iii, 240 (1926).

b. **A. maritima** var. **pubigera** Bab. Man. Brit. Bot. Ed. 6, p. 681 (1867).

A. pubigera Boiss. in DC. Prod xii, 678 (1848).

† c. **A. maritima** var. **sibirica** trans. nov.

A. sibirica Turcz. ex Boiss. in DC. Prod xii, 678 (1848).
S. maritima Mill. var *sibirica* Simmons, in Second Norw. Arctic Exped. Fram p. 34 (1906).
S. Armeria Linn. var. *sibirica* Ostenf. & Lund., in Meddel. ϕm Grϕnl. xliii, 30 (1910).

† d. **A. maritima** var. **labradorica** stat. nov.

S. Armeria Linn. sensu Amer. Auth. pro parte Sp. Pl. Ed. 1, p. 274 (1753).
A. labradorica Wallr., Beitrage i, 185 (1844).
A. vulgaris Willd. III *maritima*. Petri (c) *labradorica* Petri, Gen. Arm. p. 41 (1863).
S. labradorica Hubb. & Blake, in Rhodora, xix, 6 (1917).
S. labradorica Hubb. & Blake var. *genuina* Blake l.c.
S. labradorica Hubb. & Blake var. *submutica* Blake l.c.
S. labradorica Hubb. & Blake var. *submutica* Blake f. *glabriscapa* Blake, l.c. p. 7.
S. labradorica Hubb. & Blake var. *submutica* Blake f. *pubiscapa* Blake l.c.
A. labradorica Wallr. var. *submutica* (Blake) Lewis, Canadian Field-Naturalist xlvi, 40, 92 (1932).
A. labradorica Wallr. var. *submutica* Lewis *glabriscapa* (Blake) Lewis l.c.
A. labradorica Wallr. var. *submutica* Malte f. *pubiscapa* Malte, in Rhodora xxxvi, 185 (1936).
A. labradorica Wallr. var. *genuina* Malte l.c.

† e. **A. maritima** var. **interior** stat. nov.

S. interior Raup, in Journ. Arnold Arb. xvii, 289 (1936).

f. **A. maritima** var. **ambifaria** stat. nov.

A. ambifaria Focke, in Abh. Naturwiss. Ver. Bremen xvii, 445 (1903).
A. vulgaris Willd. var. *intermedia* Christ. f. *ambifaria* Christ. Bot. Arch. xxxi, 254 (1931).

† g. **A. maritima** var. **purpurea** trans. nov.

S. Armeria Linn. pro parte quod syn., Sp. Pl. Ed. 1, p. 274 (1753).
A. vulgaris Willd., Enum. Hort. Plant Berol. p. 333 (1809).
A. purpurea Koch, in Flora, vi, 710 (1823).
S. purpurea Koch, in Bot. Zeit. vi, II, 790 (1823).
A. vulgaris Willd. var. *purpurea* Mert. & Koch. in Roehling's Deutchl. Fl. ii, 488 (1826).
A. vulgaris Willd. var. *arctica* Cham., pro parte, Linnaea vi, 566 (1831).
A. campestris Wallr. var. *Kochii* Wallr. Beitr. i, 204 (1844).
A. arctica Wallr., pro parte. Beitr. l.c. p. 193.
A. sanguinolenta Wallr. pro parte, Beitr. l.c. p. 207.
A. elongata Koch β *purpurea* Boiss. in DC. Prod. xii, 681 (1848).
A. Armeria Karst., Fl. Deutschl. Ed. 2. ii, 489 (1895).
A. alpina Willd., var. *purpurea* Baumann, in Karsten & Schenck, Veg.-Bild. ix, t. 17 (1911).
S. arctica Blake var. *genuina* Blake, in Rhodora xix, 18 (1917).
A. vulgaris Willd. ssp. *arctica* Hulten, Fl. Aleutian Isl. p. 275 (1937).

† h. **A. maritima** var. **maroccana** trans. nov.

A. filicaulis Boiss. var *maroccana* Font Quer, in Exc. Iter Maroc. (1928).

† i. **A. maritima** var. **maria** var. nov.

Affinis A maritimae typicae a qua differt in scapis flaccidibus et ascendentibus et foliis glabris latioribus; in involucri phyllis exterioribus acutis et in tubis calicis pleurotrichis cum aristis non dististinctis ab lobis.

Allied to A. maritima typica from which it differs in the glabrous scapes weak and ascending and about twice as wide as glabrous leaves; sheath one-half to two-thirds as long as head is wide; outer involucral bracts

acute and inner ones obtuse to acutish; calyx-tube pleurotrichous with cusp indistinguishable from laminated portion of lobe.

Type: Jeronimo, Hno. no. 9143, Sierra de Maria, Almeria, Spain, June 18, 1934. Deposited in herbarium of New York Botanical Garden (determined in ed. by Fr. Sennen as *Armeria Mariae** n. sp.). Only the type sheet (four specimens) examined.

† j. **A. maritima** var. **alpina** trans. nov.

S. Armeria Linn. pro parte, quod syn. Sp. Pl. Ed. 1, p. 274 (1753).
S. montana Mill., Gard. Dict. Ed. 8, n. 2 (1768).
S. Armeria Linn. γ alpina DC. in Fl. Franc. iii, 419 (1805).
A. alpina Willd., Enum. Plant. Hort. Berol., p. 333 (1809).
S. alpina Poiret, in Lam. & Poiret Encyc. Meth. Bot. xiii, V, suppl.: 234 (1817).
A. vulgaris Willd. IV *alpina* Petri, Gen. Arm. p. 41 (1863).
A. cantabrica Boiss & Reut. in Willkomm, Prod. Fl. Hisp. ii, 366 (1870).
A. elongata Koch β *alpina* Cesati, et al, Comp. Fl. Ital. ii, 289: (1886).
A. vulgaris Willd. β *alpina* Fiori, Nuovo Fl. Ital. ii, 334 (1902).
A. alpina Willd. f. *basitricha* Simonkai, in Magyar Bot. Lapok vi, 14 (1907).
A. alpina Willd. var. *nana,* Bolozon, in Bull. Soc. Bot. Ital. p. 74 (1910).
A. alpina Willd. var. *eliatior* Conill & Despaty, in Bol. Soc. Bot. Fr. lxvii, 146 (1920).
A. alpina Willd. var. *pumila* Fuss. ex Javorka, in Magyas Fl., Budapest, p. 816 (1925).
S. montana Mill. var. *alpina* Gams, in Hegi, Ill. Fl. Mitt. Eu. v: III: 1892 (1927).
A. alpina Willd. f. *pumila* Novak. in Comm. Reg. Soc. Sci. Bohem. Math. Nat. p. 22 (1939).
A. alpina Willd. f. *glabra* Novak l.c.
A. alpina Willd. f. *hirsuta* Novak l.c.
A. alpina Willd. f. *hirtifolia* Novak l.c. p. 23.

† k. **A. maritima** var. **alpinifolia** stat. nov.

A. alpinifolia Pau & Font Quer, in Font Quer, Iter Maroc. 1927 no. 473 (1928).
S. alpinifolia Maire, in Jahandiez & Maire, Cat. Plant. Maroc. iii, 566 (1934).

† l. **A. maritima** var. **californica** trans. nov.

S. Armeria Linn. pro parte (sensu Amer. auth.), Sp. Pl. Ed. 1. p. 274 (1753).
A. andina Poeppig ex Boiss. β *californica* Boiss. in DC. Prod. xii, 682 (1848).
S. Armeria var. *arctica* Simmons, in Acta Univ. Lund. n.s. ix, 121 (1913), pro parte.
S. arctica Blake var. *californica* Blake, in Rhodora, xix, 18 (1917).

m. **A. maritima** var. **elongata** Massart, Fl. Neu Pom.

Statice Armeria Linn., Sp. Pl. Ed. 1, p. 274 (1753), as to specimen.
Druce (1901) criticized Sir J. D. Hooker for citing in "The Students' Flora" *S. Armeria* L. as a synonym of *A. vulgaris* Willd., saying:

> ". . . . this latter synonym does not belong to the British plants, and, as the specimen in the Linnæan Herbarium shows, is the *Armeria elongata* Hoffm."

This is the only reference the writer has found to the identity of Linnæus' type specimen on which the genus *Armeria* is founded. Examination of a photograph of the specimen in the Linnæan Herbarium substantiates Druce's statement, although from the photograph it was not possible accurately to determine the exact nature of the outer involucral bracts.
S. Armeria Linn., sensu Pollich, Hist. Plant in Palat. Elec. i, n. 318 (1776).
S. elongata Hoffm., Deutschl. Fl., Ed. 2, i, 150 (1800).
For reasons not clear to the writer, Index Kewensis cited "Hoffm., Deut.

---

* The spelling of var. *maria* is made deliberately distinct from that of Sennen ined.

Fl. i: 150: as authority for the name of *A. elongata*. For *S. elongata* the same authority and reference are given, except that "ed. 2." is specified. Both of these references are prior to 1809 at which time the genus Armeria was established. The citation given for *Statice elongata* Hoffm. in Index Kewensis appears to be correct, and that for *Armeria elongata* incorrect.

S. Armeria Linn. β *elongata* DC. in Fl. Franc. iii, 419 (1805).
A. scabra Willd. ex Roem. & Schult., Syst. vi, 776 (1820).
A. elongata Koch, in Flora vi, 698 (1823).
A. vulgaris Willd. β *elongata* Mert. & Koch, in Roehling's Deutschl. Fl. ii, 487 (1826).
A. campestris Wallr. var. *Hoffmannii* Wallr., Beitr. i, 204 (1844).
A. vulgaris Willd. II *elongata* Petri, Gen. Arm., p. 39 (1863).
A. maritima Willd. f. *elongata* Blytt, Norges Fl. Del II. Kristiana (1874).
A. vulgaris Willd. α *elongata* Fiori, Nuovo Fl. Ital. ii, 235 (1926).
A. vulgaris Willd. var. *elongata* Petri f. *Hoffmannii* Christiansen, in Bot. Archiv. xxxi, 253 (1931).
A. vulgaris Willd. var. *elongata* Petri f. *persicina* Christiansen l.c.

† n. **A. maritima** var. **ruscinonensis** stat. nov.
Armeria ruscinonensis Gir, in Ann. Sci. Nat. ser. III, ii, 323 (1844).

† o. **A. maritima** var. **barcensis** stat. nov.
Armeria barcensis Simonk. in Magyar Bot. Lapok. vi, 13 (1907).
In an exsiccata sent out by the Botanical Museum of the Univ. of Cluj is a specimen (Nyarady, E. T. no. 1310, June 1930) determined as "*A. alpina* Willd. ssp. *barcensis* Simk." and bearing the citation given above. In the paper cited, the plant is described as a new species and not as a subspecific form of *A. alpina* Willd.

† p. **A. maritima** var. **andina** stat. nov.
A. chilensis Boiss. pro parte, in DC. Prod. xii, 681 (1848).
A. andina Poepp. ex Boiss. in DC. Prod. xii, 682 (1848).
A. exaristata Phil. pro parte, in Anal. Univ. Santiago, xci, 245 (1895).
A. argialea Phil. l.c. p. 246 (1895).
S. andina Rendle, in Journ. Bot. xlii, 369 (1904).
A. chilensis Boiss. ssp. *andina* Reiche, Fl. Chile vi, 104 (1911).

† q. **A. maritima** var. **patagonica** stat. nov.
A. patagonica Phil. in Anal. Univ. Santiago, xci, 244 (1895).
A. exaristata Phil. pro parte, l.c. p. 245.
A. elongata Koch var. *chilensis* Skottsberg pro parte, in Kungl. Svensk. Vetens. Akad. Handl. lvi, 286 (1916).

† r. **A. maritima** var. **curvifolia** trans. nov.
A. curvifolia Bert. in Merc. Chil. p. 563 (1830) and in Bull. Ferussac xx, 108 (1830).
A. chilensis Boiss. α *curvifolia* Boiss. in DC. Prod. xii, 682 (1848).
A. tenuifolia Phil. in Anal. Univ. Santiago, xci, 245 (1895).
S. punicea Rendle, in Journ. Bot. xlii, 369 (1904).
A. elongata Koch var. *chilensis* Skottsberg, pro parte, in Kungl. Svensk. Vetens. Akad. Handl. lvi, 286 (1916).

† s. **A. maritima** var. **majellanica** trans. nov.
A. chilensis Boiss. β *brevifolia* Boiss. in DC. Prod. xii, 682 (1848).
A. chilensis Boiss. γ *majellanica* Boiss. Prod.
A. Delfini Phil. in Anal. Univ. Santiago, xci, 246 (1895).
A. bella Alboff, in Rev. Mus. LaPlata, vii, p. 385, t. 7 (1896).
A. elongata Koch var. *maritima* Skottsberg f. *bella* Skottsberg, in Kungl. Svensk. Vetens. Akad. Handl., lvi, 286 (1916).

† t. **A. maritima** var. **macloviana** trans. nov.
S. cæspitosa Poiret, sensu Durv., in Lam. Encyc. vii, 396 (1806).
A. macloviana Chamisso, in Linnaea vi, 567 (1831).
S. Armeria Linn. sensu J. D. Hooker in Fl. Arctica , II, 339 (1844).
A. androsacea Boiss. in DC. Prod. xii, 679 (1848).

A. brachyphylla Boiss. l.c., p. 682 (1848).
S. macloviana Macloskie, in Rep. Princeton Univ. Exped. Patagon. viii, 655 (1903).
A. chilensis Boiss. ssp. *macloviana* Reiche, Fl. Chile vi, 104 (1911).
A. elongata Koch var. *macloviana* Skottsberg, in Kungl. Svensk. Vetens. Akad. Handl. lvi, 285 (1916).

14. **Armeria juniperifolia** Willd. ex Hoffmgg. & Link, Fl. Port. i, 442 (1809).

Key to varieties of *juniperifolia:*

1. Blade of leaf sharply or obtusely triangular in cross-section: scape as wide as leaves or wider, not exceeding twice the length of leaves.
   2. Leaves 1.5 mm. wide or more, margins coriaceous and glabrous.c. var. *bigerrensis*
   2. Leaves 1.0 mm. wide or less, margins ciliate.
      3. Length of leaves 0.4-1.0 cm.: calyx-lobes truncate or briefly ovate, mucronate.....a. *typica*
      3. Length of leaves 1.2-2.0 cm.: calyx-lobes ovate-lanceolate.....var. *Isernii*
1. Blade of leaf flat: scapes narrower than leaves, usually exceeding them by three to four times.....b. var. *splendens*

a. **A. juniperifolia,** typical element.

S. juniperifolia Vahl, Symb. Bot. i, 25 (1790).
Vahl's description of his specimen was sufficiently clear and precise to differentiate it from other variants of this species. He said: ". . . folia triquetra, rigida, apice mucrone albo pungentis; semipollicaria scapus folias duplo altio. . . . ."
S. cæspitosa Cav., Icones i, 38 (1793).
A. juniperifolia Willd. ex Hoffmgg. & Link, Fl. Port. i, 442 (1809).
Willdenow did not state that his combination was based on Vahl's specimen, but the description and synonymy admit little question as to the identity of his plant.
A. cæspitosa Boiss. in DC. Prod xii, 679 (1848).

† b. **A. juniperifolia** var. **splendens** trans. nov.

S. splendens Lag. & Rodr. in Ann. Cienc. Nat. xi, 749 (1802).
A. australis Boiss. in Voy. Bot. Espag., ii, 526 (1845).
A. australis Boiss. var. *splendens* Boiss. l.c. 527.
A. splendens Boiss. in DC. Prod. xii, 680 (1848).
A. cæspitosa Boiss. var. *splendens* Vic. & Beltr. in Bol. Soc. Espan. Hist. Nat. 311 (1913).

† c. **A. juniperifolia** var. **bigerrensis** trans. nov.

A. cæspitosa Boiss. var. *bigerrensis* Vic. & Beltr. in Bol. Soc. Espan. Hist. Nat. xiii, 311 (1913).

† d. **A. juniperifolia** var. **Isernii** trans. nov.

A. cæspitosa Boiss. var. *Isernii* Vic. & Beltr. l.c. 310.

15. **Armeria Langeana** Henriques ex. Dav. in Bol. Soc. Brot. v, 7, (1867).

A. Henriquesii Dav. l.c. vi, 170 (1888).
A. Langeana Henriques ex Dav. var. *genuina* sensu Dav., l.c.
A. Langeana Henrique ex Dav. var. *glabra* Dav. l.c.

16. **Armeria plantaginea** Willd., Enum. Plant. Hort. Berol. i, 334 (1809).

The nomenclatorial status of this plant cannot be established definitely until the type specimens of the several authors have been critically examined and studied.

The combination *Statice plantaginea* was first made by Allioni in 1789. It was accompanied by an inadequately brief description which characterized the plant as having lanceolate leaves and a capitulate head. In 1809 Willdenow, in his "Enumeratio," made the combination *Armeria plantaginea.* With this he gave a brief description, but no synonymy. Immediately following his *A. plantaginea* Willdenow made the new name *A. scorzoneræfolia,* which was followed by a somewhat more adequate description than

his *A. plantaginea*. Both of Willdenow's names are represented by type specimens, of which photographs have been seen, and Ebel and Boissier have stated that they were from cultivated plants as is indicated on the labels. Roemer and Schultes claimed (1820) that the type of Willdenow's *A. plantaginea* is not the same plant as Allioni's *S. plantaginea*, but that the former's *A. scorzoneræfolia* is not distinct from *S. plantaginea* All. Few botanists since the publication of Ebel's "Genere Armeria" have considered Willdenow's *A. plantaginea* and *A. scorzoneræfolia* as specifically distinct, but have recognized the latter as a variety of the former. Should Roemer and Schultes' statements regarding the typification of these three biotypes prove to be correct, it will be necessary according to the "homonym rule" of Article 54 of the International Rules of Botanical Nomenclature (edition of 1935), to drop the epithet of *plantaginea* and take up Willdenow's name of *scorzoneræfolia* for this plant. From a study of photographs of Willdenow's types and of Allioni's figure, it does not appear that this will be necessary.

Key to varieties of *plantaginea:*

1. Outer involucral bracts as long as head or longer.
   2. Head 2.0 cm. wide or more: leaves usually exceeding 10 cm. in length.....a. *typica*
   2. Head 1.0-1.8 cm. wide: leaves usually less than 10 cm. in length, and rarely exceeding 12 cm.....b. var. *longibracteata*
1. Outer involucral bracts distinctly shorter than the head.
   3. Leaves 2-3 cm. long, outer bracts lanceolate lobong.....c. var. *brachyphylla*
   3. Leaves 3.5-12.0 cm. long, outer bracts lanceolate-ovate and usually cuspidate.
      4. Involucral bracts very pale tan to straw-colored; corolla white .....d. var. *leucantha*
      4. Involucral bracts tan or reddish; corolla pink to purplish-red.
         5. Scapes 3-12 cm. long: leaves narrow; outer involucral bracts one-third as long as inner or less.....b. var. *brachylepis*
         5. Scapes 12-47 cm. long: leaves 4.0-8.0 mm. wide; outer involucral bracts one-third as long as inner or longer.....f. var. *bupleuroides*

a. **A. plantaginea,** typical element.

? *S. plantaginea* All., Fl. Pedem. i, 90 (1789).
S. scorzonerifolia Link, in Schrad. Journ. i, 62 (1800).
A. plantaginea Willd. Enum. Plant. Hort. Berol. i, 334 (1809).
A. scorzoneræfolia Willd., l.c.
A. rigida Wallr. ssp. *latifolia* Wallr., Beitr. i, 200 (1842).
A. plantaginea Willd. var *scorzoneræfolia* Boiss. in DC. Prod. xii, 683 (1848).
S. plantaginea All. var. *grandiflora* ex Bailey, in Rhodora, xviii, 157 (1916).

b. **A. plantaginea** var. **longibracteata,** Boiss. in DC. Prod. xii, 683 (1848).

S. arenaria Pers. Syn. Plant. i, 332 (1805).
A. plantaginea Willd., sensu Koch, in Bot. Zeit. vi, 701 (1823).
A. montana Wallr., Beitr. i, 210 (1844).
A. stenophylla, Girard, in Ann. Sci. Nat. Bot. Ser. III, ii, 323 (1844).
A. montana Wallr. var. *stenophylla* Rouy, in Le Natur, xiv, 166 (1906).
A. montana Wallr. var. *typica* (sensu Rouy), Rouy, Fl. Franc. x, 173 (1908).

c. **A. plantaginea** Willd. var. **leucantha** Boiss. in DC. Prod. ii, 683 (1848).

S. alliacea Cav. sensu Willd. Sp. Pl. Ed. 4, i, II: 1794.
A. dianthoides Hornem. in Ebel, Gen. Arm. p. 34 (1840).
S. plantaginea All. var. *alba* Hubb. ex Bailey, in Rhodora, xviii, 157 (1916).
S. plantaginea All. var. *leucantha* Hubb. ex Bailey l.c.
A. plantaginea var. *mas-guindalii* Pau, no. 510 in Exc. of Font Quer, Iter Maroc. (1930).

d. **A. plantaginea** var. **brachyphylla** Boiss. in DC. Prod. xii, 683 (1848).

e. **A. plantaginea** var. **brachylepis** Boiss. l.c.

A. scorzoneræfolia Willd. sensu Balb. & Noc., Fl. Ticin. t. 6 (1816).
A. bupleuroides Godr. var. *reducta* Rouy, Fl. Franc. ii, 174 (1908).

† f. **A. plantaginea** var. **bupleuroides** trans, nov.

A. bupleuroides Godr. in Gr. & Godr., Fl. Franc. ii, 736 (1852).
A. sabulosa Jord. ex Bor., Fl. Cent. Franc. Ed. 3, ii, 537 (1857).
A. præcox Jord. in Bull. Soc. Dauph. fasc 3; 79 (1857?).
A. vulgari-plantaginea, Syme, in Eng. Bot. vii, 159 (1877?).
S. plantaginea All var. *bupleuroides* Druce, in Journ. Linn. Soc. Bot xxxv 76 (1901).
A. castellana Leresche & Levier ex Merino, Fl. Galicia, ii, 235 (1906).
Index Kewensis (Suppl. IX, p. 25) cites the publication of this name as follows: "*Armeria castellana* Lev. Ler. ex Rothmaler in Bol. Soc. Esp. Hist. Nat. 1934, xxiv. 154 in syn.: Statice castellana."
A. sabulosa Jord. var. *serpentinii* LeGend. in Bull. Geogr. Bot LeMans, xxix, 31 (1919).
A. vulgaris Willd. var. *bupleuroides* Fiori, Nuovo Fl. Ital. ii, 235 (Jan. 1926).
A. montana Wallr. forma *sicorisiensis* Sennen, no. 5886 in Exc. of Aug. 7, 1926 "Plantes d' Espagne."
S. castellana Rothmaler, in Bol. Soc. Espan. Hist. Nat. xxiv, 154 (1934).

17. **Armeria alliacea** Hoffmgg. & Link, Fl. Port. i, 441 (1809).

S. alliacea Cav. Icones, ii, tab. 109 (1793).
A. alliacea Hoffmgg. & Link, Fl. Port. i, 441 (1809) and R. & S. Syst. vi, 773 (1820).
The identity of Hoffmannsegg and Link's plant is in doubt. No type material has been seen. In the work cited, a figure is given and reference is made to Cavanilles plant and description. Boissier placed the combination under *A. plantaginea* Willd. but gave no reasons for doing so. The plate of Hoffmannsegg and Link's plant does not show the characters needed in the separation of *A. alliacea* and *A. plantaginea*. The description is not sufficiently complete to warrant full confidence in it, yet no part of it contradicts the diagnostic features believed to exist in *A. alliacea*. Until the types of Hoffmannsegg & Link, Roemer and Schultes and of Boissier have been examined and studied, this disposition of *A. alliacea* Hoffm. & Link seems acceptable.
A. alliacea Ebel pro parte, Gen. Arm. p. 32 (1840).
A. juncea Wallr. Beitr. i, 212 (1844), non Gir.
A. allioides Boiss., in Voy. Bot. Espag. ii, 525-26 (1845).
A. alliacea Pau var. *allioides* Pau in Fedde, Repert. viii, 136 (1910).
A. alliacea Pau var. *heterophylla* Pau, in Bol Soc. Espan. Hist. Nat xvi, 139 (1916).

18. **Armeria longiaristata** Boiss. & Reut., Pugill. Plant. Nov. p. 103 (1852).

A. allioides Boiss. sensu Willkomm, Prod. Fl. Hispan. ii, 366 (1870).

† 19. **Armeria pseud-armeria** trans. nov.

S. pseud-armeria Murr. in Linn. Syst. Veg. Ed. 14, p. 300 (1784).
Index Kewensis credited Murray with the authorship of *Armeria pseud-armeria*. He did not make this combination.
S. cephalotes Ait., Hort. Kew. Ed. 1, i, 383 (1789).
S. scorzonerifolia Link, in Schrad. Journ i, 60 (1800).
A. latifolia Willd., Enum. Plant. Hort. Berol i, 334 (April, 1809).
A. cephalotes Hoffmgg. & Link, Fl. Port. i, 440 (1809).
A. grandiflora Hort. ex Boiss. in DC. Prod. xii, 684 (1848).
A. formosa Hort. ex Vilmorin, Fl. Pleine Terre, ed. 1, p. 848 (1863).
A. cephalotes (Ait.) Hoffmgg. & Link var. *bracteata* Hort. in Gard. Chron. xx, 213 (1883).
S. pseudoarmeria Murr. var. *alba* Hubb. ex Bailey, in Rhodora, xviii, 158 (1916).
S. pseudoarmeria Murr. var. *grandiflora* Hubb. ex Bailey, l.c.
S. pseudoarmeria Murr. var. *rubra* Hubb. ex Bailey, l.c.
S. pseudoarmeria Murr. var. *splendens* Hubb. ex Bailey, l.c.

20. **Armeria denticulata** Bertol. Amoen. Ital. p. 77 (1819).

A. vulgaris Willd. var. *denticulata* Fiori in Fiori, A. & Paoletti, G. Fl. Analitic d'Italia. 1902.

21. **Armeria canescens** Ebel, Gen. Arm. p. 28 (1840).

Armeria canescens is confined to south-central Europe and is here treated as comprised of three elements which in native material are often separated with difficulty and in cultivated material scarcely separable.

A tentative key to the varieties of *canescens:*

1. Involucral bracts tan-colored: corolla pink to rose-pink.
   2. Calyx usually 8-10 mm. long; tube about as long as limb; cusp usually twice as long as laminated portion of calyx-lobe.....a. *typica*
   2. Calyx 4.8-8.0 mm. long; tube about two-thirds as long as limb or less; cusp as long as laminated portion of calyx-lob or shorter..b. var. *brachyphlla*
1. Involucral bracts very pale straw colored: corolla usually white...c. var. *leucanha*

a. **A. canescens,** typical element.

A. denticulata Bertol. sensu Portenschlag, Plant. Dalmat. vi, 6 (1824).
A. maritima Willd. sensu Ten., Fl. Nap., Atlas. iii, 354 (1824).
S. canescens Host, Fl. Austr. i, 407 (1827).
A. gracilis Ten., l.c. v, 223 (1830).
A. gracilis Ten. var. *humilis* Ten., l.c.
A. alpina Willd. sensu Ten., Syll. Plant. p. 158 (1831).
A. canescens Ebel, Gen. Arm. p. 28 (1840) and Boiss. in DC. Prod xii, 686 (1848).
A. canescens (Host) Ebel var. *latifolia* Vis., Fl. Dalmat. ii, 6 (1847). (*varietas ambiguas*).

The identity of Visiani's plant is not known to the writer with any reasonable degree of certainty. The figure Visiani presented is not adequate (l.c. t. III). Hyek placed it with *A. majellensis* Boiss. while Novak treated it as a form of *A. canescens.* In the absence of an authentic specimen it seems best to treat the varietal name as ambiguous.

S. Pantoscekii Strobl, in Flora, lxv, 183 (1882).
A. dalmatica G. Beck-Mannagetta, in Ann. Nat.-Hist. Hofmus. Wien, xiii, I: 199 (1898).
A. vulgaris Willd. var. *canescens* Fiori, Nuovo Fl. Ital. ii, 334 (1902).
A. vulgaris Willd. var. *gracilis* Fiori, l.c.
A. vulgaris Willd. var. *gracilis* Fiori f. *Tenorei* Fiori, l.c.
A. Tenorei Lacaita, in Nuov. Giorn. Bot. n. s. xxv, 15 (1918).
A. Pantoscekii K. Maly, in Glasnik zemalzskog muzeja u Bosni i Hercegovini, xl, 113 (1928).
A. canescens Ebel var. *eu-canescens* sensu Novak, in Comm. Reg. Soc. Sci. Bohem. Math.-Nat., Prague xxvii, 5 (1938).
A. canescens Ebel var. *eu-canescens* sensu Novak f. *typica* sensu Novak, l.c. 6.
A. canescens Ebel var. *eu-canescens* sensu Novak f. *latifolia* Novak, l.c. 7.
A. canescens Ebel var. *eu-canescens* sensu Novak f. *angustifolia* Novak, l.c. 8.
A. canescens Ebel var. *eu-canescens* sensu Novak f. *pubiscapa* Novak, l.c.
A. canescens Ebel var. *eu-canescens* sensu Novak f. *Pantoscekii* Novak, l.c.
A. canescens Ebel var. *eu-canescens* sensu Novak f. *albiflora* Novak, l.c. 9
A. canescens Ebel var. *eu-canescens* sensu Novak f. *submajellensis* Novak, l.c.
A. canescens Ebel var. *dalmatica* Novak, l.c. 11.
A. canescens Ebel var. *dalmatica* Novak f. typica sensu Novak, l.c. 12.
A. canescens Ebel var. *dalmatica* Novak f. *rosea* Beck. ex Novak, l.c.
A. canescens Ebel var. *dalmatica* Novak f. *pseudodalmatica* Novak, l.c.

† b. **A. canescens** var. **brachyphylla** trans. nov.

A. majellensis Boiss. in DC. Prod xii, 685 (1848).
A. Orphanidis Boiss., Diagn. Plant. Orient. Nov. Ser II: iii, fasc. 4: p. 71 (1859).
A. majellensis Boiss. var. *brachyphylla* Boiss. in Fl. Orient. iv, 873 (1879).
A. elongata (Hoffm.) Koch sensu Archangeli, Com. Fl. Ital. p. 579 (1882).
A. alpina Willd. var. *lancifolia* Freyn in Verh. Zool.-Bot. Ges. Wien (1888).
A. majellensis Boiss. var. *elatior* Levier ex Arch. in Atti Soc. Tosc. Sci. Nat. vi, 157 (1888).

A. canescens Ebel f. *dasypoda* Murbeck, in Lunds Universitets Arsskrift xxvii, 51 (1891).
A. canescens Ebel var. *majellensis* Halacsy, in Denk. Akad. Wiss. Wien. p. 254 (1894).
A. majellensis Boiss. var. *stenophylla* Beck. in Wiss. Mitth. aus Bosn. & Herv. v, 485 (1897) and in Ann. Nat.-Hist. Hofmus. xiii, I, 198 (1898).
A. Foucaudii Beck, in Ann. Nat.-Hist. Hofmus., Wien, xiii, I, 16 (1898).
A. canescens Host var. *majellensis* Hal. f. *albanica* Beck, in Ann. Nat.-Hist. Hofmus. xiii, I, 198 (1898).
A. vulgaris Willd. var *majellensis* Fiori, Nuovo Fl. Ital. iii, 334 (1902).
A. canescens Ebel var. *latifolia* Vis. f. *dasyphylla* Rohlena in, Fedde, Repert. iii, 148 (1906).
S. majellensis (Boiss.) Hubb. ex Bailey, in Rhodora, xviii, 157 (1916).
A. canescens Ebel *latifolia* Vis. subvar. *albanica* Hayek, Prodr. Fl. Balcan. ii, 11 (1931).
A. canescens Ebel var. *latifolia* Vis. *stenophylla* Hayek, l.c.
A. canescens Ebel var. *latifolia* Vis. *dasypoda* Murbeck emend. Hayek, l.c.
A. canescens Ebel var. *majellensis* Hal. f. *typica* sensu Novak in Comm. Reg. Soc. Sci. Bohem. Math.-Nat., Prague, xxvii 15 (1938).
A. canescens Ebel var. *majellensis* Hal. f. *dolichophylla* Novak, l.c. 16.
A. canescens Ebel var. *majellensis* Hal. f. *microphylla* Novak, l.c.
A. canescens Ebel var. *majellensis* Hal. f. *platyphylla* Novak, l.c. 17.

† c. **A. canescens** var. **leucantha** trans. nov.

S. alliacea Sibth. & Sm., Fl. Graeca, iii, t. 294 (1819), non Cav.
S. undulata Bory Exped. Moree Bot. iii, 93, t. 10 (1832); also in Nouv. Fl. Pelop. p. 20, t. 11 (1838).
A. argyrocephala Wallr., Beitr. i, 206 (1844).
A. undulata Boiss. in DC. Prod. xii, 685 (1848).
A. majellensis Boiss. l.c. var. *leucantha* Boiss. Fl. Orient. iv: 873 (1879).
A. argyrocephala Wallr. f. *minor* Haussk. in Mitth. Thur. Bot. Ver. N.F. xii, 54 (1897).
A. argyrocephala Wallr. f. *longifolia* Haussk. l.c.
A. argyrocephala Wallr. var. *græca* Beck, in Ann. Nat.-Hist. Hofmus. xiii, I, 200 (1898).
A. undulata Boiss. var. *græca* Halacsy, Conspec. Fl. Græcæ, iii, 25 (1904).
A. undulata Boiss. var. *argyrocephala* Novak, in Comm. Reg. Soc. Sci. Bohem. Math.-Nat., Prague, xxviii, 8 (1939).
A. undulata Boiss. var. *argyrocephala* Novak f. *typica* sensu Novak, l.c.
A. undulata Boiss. var. *argyrocephala* Novak f. *longifolia* Novak, l.c.
A. undulata Boiss. var. *argyrocephala* Novak f. *brevifolia* Novak, l.c.

22. **Armeria eriophylla** Willk. in Bol. Soc. Brot. ii, 145 (1883).

A. eriophylla var. *Marizii* Dav. in Bol. Soc. Brot. vi, 34 (1887).

† 23. **Armeria quichiotis** trans. nov.

S. quichiotis Gonz.-Albo. Bol. Soc. Espan. Hist. Nat. xxiv (1934).
A. quichiotis Gonz.-Albo l.c. in syn.

† 24. **Armeria lanceobracteata** sp. nov.

Planta cæspitosa: caudex virgatus, circa 3 cm. longa: foliis dissimilibus; foliis exterioribus 3-5 cm. longis et 1.4-2.0 mm. latis, ciliatis, anguste scariosis, glabris; foliis interioribus 3-7 cm. longis et 0.8-1.2 mm. latis, obtuse-acutis, planis, glabris, valde ciliatis: scapis 14-19.5 cm. longis et circa 1.4 mm. latis, pilosis: capitulis hemisphericis, 1.6-1.8 cm. latis: involucri phyllis externis lanceolatis, acutis, fere æquantes interiores, late scariosis, glabris: involucri phyllis interioribus late lanceolatis, acutis vel acuminatis, late scariosis, glabris: bracteolis interfloralibus glabris, calicibus æquilongis: spiculis sessilibus: pedicellis fere 1.5-2.5 mm. longis: calices 5.5-6.5 mm. longis; tubo 2.5-3.0 mm. longo, holotricho, pilis circa 0.5 mm. longis, non appressis; lobis triangularibus, 2.0-2.2 mm. longis cum aristis 1.0-1.5 mm. longis; calcare nullo, calicum basibus angustis, acutis; foveola obovata: corolla colore ignoto.

Plant cespitose, stem branched about 3 cm. long: leaves dimorphic; outer leaves 3-5 cm. long and 1.4-2.0 mm. wide, ciliate, narrowly scarious, glabrous; inner leaves 3-7 cm. long and 0.8-1.2 mm. wide, bluntly acute, flat, glabrous, strongly ciliate: scapes 14-19.5 cm. long and about 1.4 mm. wide, pilose; heads hemispherical, 1.6-1.8 cm. wide: outer

involucral bracts lanceolate, acute, about as long as inner ones, broadly scarious, glabrous: inner involucral bracts broadly lanceolate, acute or acuminate, broadly scarious, glabrous: interfloral bracts glabrous, scarcely as long as calyces: spiculæ sessile: pedicels about 1.5-2.5 mm. long: calyces 5.5-6.5 mm. long; tube 2.5-3.0 mm. long, holotrichous, hairs about 0.5 mm. long, not appressed; lobes triangular, 2.0-2.2 mm. long with cusps 1.0-1.5 mm. long; spur absent, base of calyx narrowed, acute; foveola obovate: corolla color not known.

Closely related to *A. littoralis* and its var. *ancarensis*, from which it differs in outer involucral bracts lanceolate, acute to acuminate; inner involucral bracts broadly lanceolate and about as long as the outer ones or longer; pedicel nearly as long as calyx-tube; calyx densely hairy on vertical and connecting ribs and on intercostal spaces, hairs about 0.5 mm. long and not appressed; cusp 1.0-1.4 mm. long.

Type: Gandoger, Almeria on the Sierra de Maria, southern Spain. June 20, 1903. Deposited in the United States National Herbarium under accession number 1,051,444. Three specimens are on this sheet, the one on the extreme left is here designated as the most typical. The outer leaves are not apparent on the central specimen of the sheet.

25. **Armeria littoralis** Hoffmgg. & Link, Fl. Port. i, 441 (1809).

Key to varieties of *littoralis:*

Outer involucral bracts mucronate: heads usually 0.8-1.2 cm. across.....a. *typica*
Outer involucral bracts acuminate: heads usually 1.2-1.6 cm. across.b. var. *ancarensis*

a. **A. littoralis,** typical element.
A. littoralis var. *hispida* Dav. in Bol. Soc. Brot. vi, 33 (1889).

† b. **Armeria littoralis** var. **ancarensis** trans. nov.
A. Durixi Boiss. in DC. Prod. xii, 784 (1848).
A. ancarensis Merino, in Bol. Soc. Espan. Hist. Nat. iii, 155 (1903).
A. Durixi Boiss. var. *ancarensis* Merino, Fl. Galicia ii, 233 (1906).
A. filicaulis Boiss. var. *Bourgeani* Pau, in Mem. Mus. Cienc. Nat. Barcel., Ser. Bot ix, 66 (1922).
S. ciliata Roth. in Bol. Soc. Espan. Hist. Nat. xxxiv, 154 (1934).
S. asturiana Roth l.c.
S. ancarensis Roth. in Cavanillesia, vii, 118 (1935).

26. **Armeria sardoa** Spreng. Syst. Veg. Ed. 16, iv, II, 127 (1827).
Head 0.8-1.5 cm. across; cusp 0.3-0.8 mm. long.....a. *typica*
Head 1.8-2.5 cm. across; cusp 0.9-1.2 mm. long.....b. var. *nebrodensis*

b. **A. sardoa** var. **nebrodensis** Parlatore, Fl. Ital. viii, 596 (1889).
A. alpina Willd. sensu Gussone, Prod. Fl. Sic. p. 378 (1827).
S. nebrodensis Guss., Fl. Sic. Syn. i, 366 (1842).
A. heterophylla Wallr. Beitr. i, 188 (1844).
A. nebrodensis Boiss. in DC. Prod. xii, 685 (1948).
A. sardoa Spreng *β nebrodensis* Parlatore, Fl. Ital. viii, 596 (1889).
A. vulgaris Willd. var. *nebrodensis* Fiori, Nuovo Fl. Ital. ii, 236 (1926).

27. **Armeria juncea** Gir. in Ann. Sci. Nat. Ser. III, ii, 324 (1844).
A. tenuis Wallr. var. *humilis* Wallr., Beitr. i, 184 (1844).
A. filicaulis Boiss. *β minor* Boiss. Voy. Bot. Espag. i, 527 (1845).
A. Malinvaudii Coste & Soulie, Bol. Soc. Bot. Franc. lviii, 364 (1911).
S. juncea Hubb. ex Bailey, in Rhodora, xviii, 157 (1916).

28. **Armeria filicaulis** Boiss. in Voy. Bot. Espag. i, 527 (1845).
A. tenuis Wallr. var. *elata* Wallr., Beitr. i, 184 (1844).
A. filicaulis Boiss. *α major* Boiss. in Voy. Bot. Espag. i, 527 (1845).

† 29. **Armeria Bubanii** spec. nov.

Plantæ cæspitosæ: foliis conformibus, uninerviis, angustissime lanceolato-linearibus, 2.6-6.0 cm. longis et 0.8-1.6 mm. latis, acutis, glabris, margine anguste scariosa: scapis glabris, glandulari-pustulatis, 15-35 cm. longis et 0.8-1.4 mm. latis: capitulis hemisphericis, 1.8-2.1 cm. latis: involucri phyllis externis primum lanceolatis tum anguste ovatis,

acutis, prope tam longis quam interiora et brevioribus quam caput, herbaceis cum margine angustissime scariosa, atrorufis (in exsiccatis): involucri phyllis interioribus ovatis vel ovato-oblongis vel latissime ellipticis et exterioribus saepe simillimis, muronculatis vel obtusis, margine anguste scariosa: bracteolis interfloralibus glabris, calicibus aequilongis: spiculis stipitatis, pedunculis 0.7-1.0 mm. longis: pedicellis 1.8-2.2 mm. longis: calicis fere 5.4-6.2 mm. longis; tubo 2.2-2.6 mm. longo, pleurotricho, costis secundis minus vestitis quam costae primae, intervallis glabris et latioribus quam costae; limbo 3.0-4.0 longo; lobis triangularibus, circa 1.4 mm. longis; aristis 0.6-1.0 mm. longis; calcarenullo, calicis basis acuta; foveola obovata: corolla colore ignoto.

Plants cespitose: leaves uniform, 1-nerved, narrowly lanceolate-linear, 2.6-6.0 cm. long and 0.8-1.6 mm. wide, acute, glabrous, margins narrowly scarious: scapes glabrous, glandular-pustulose, 15-35 cm. long and 0.8-1.4 mm wide: sheath 1.2-1.4 cm. long: head hemispherical, 1.8-2.1 cm. wide: outer involucral bracts lanceolate to narrowly ovate, acute, about equal in length to inner ones and shorter than head, herbaceous with very narrow scarious margins, dark reddish-brown (in dried specimens): inner involucral bracts ovate to obovate or broadly elliptic and often difficult to distinguish from the outer ones, mucronulate to obtuse, margins narrowly scarious: inter-floral bracts glabrous, as long as calyx: spiculæ stipitate, peduncle 0.7-1.0 mm. long; pedicel 1.8-2.2 mm. long: calyces usually 5.4-6.2 mm. long; tube 2.2-2.6 mm. long, pleurotrichous, secondary ribs more sparsely vestured than the primary ones, intercostal spaces glabrous and wider than the ribs; limb 3.0-4.0 mm. long; lobes triangular, about 1.4 mm. long; cusp 0.6-1.0 mm. long; spur absent, base of calyx acute; foveola obovate: corolla color not known.

Type: Bubani, P., Pyrenees merid., Aragon, supra Bielsa, Mt. Menet, Spain. August 18, 1845. Deposited in the United States National Herbarium, Washington, under accession number 1,655,942. Named in honor of its discoverer, the Italian botanist, Pietro Bubani.

This species is distinguished from the *Armeria canescens* complex by its stipitate spiculæ, from *A. portensis* and forms of *A. leucocephala* by its stiffly erect, strongly glandular-pustulose, glabrous scape and the leaves and involucral bracts glabrous throughout.

The above description and dimensional limits are based on the type collection.

† 30. **Armeria portensis** spec. nov.

Planta laxe caespitosa: caudex virgatus, ad 3 cm. longus: foliis conformibus, linearibus univerviis, 3.0-7.5 cm. longis et 1.4-2.6 mm. latis, obtuso-acutus vel acutis, planis, anguste scariosis, primo brevi-tomentosis tum glabrescentibus, scapis 12-18 cm. longis, brevi-pubescentibus, angustiroibus quam folia: vagina 1.0-2.0 cm. longa, primo brevitomentosa tum glabra, vestitus si praesens densior ad caput: capitulis hemisphericis, 1.8-2.2 cm. latis: involucri phyllis externis ovato-lanceolatis, acutis, parvo brevioribus quam interiora, viridibus in nervo centrali, anguste scariosis, puberulentis et raro omnino glabris: involucri phyllis interioribus ovatis vel ovato-oblongis, obtusis, puberulentibus vel sparse pubescentibus, scariosis ad apicem: braceteolae interflorales fere pubescentes, calicibus æquilongis: spiculis stipitatibus, pedunculis 1.5-2.0 mm. longis: pedicellis 2.4-4.0 mm. longis, apices patule: calicis fere 6.0-7.0 mm. longis; tubo 2.5-3.1 mm. longo, holotricho cum vestitu costarum primarum multo densiore quam vestitus costarum secundariorum et transversorum; limbo 3.2-3.8 mm. longo; lobis obtusis vel prope truncatis, 0.8-1.1 mm. longis cum arista distincta, 0.3-0.5 mm. longis; calcare nullo, calicum basibus angustis acutis; foveola orbiculari: corolla colore ignoto.

Plant loosely cespitose, stem branched, to 3 cm. long: leaves alike, linear, 1-nerved, 3.0-7.5 cm. long and 1.4-2.6 mm. wide, bluntly acutish to acute, flat, narrowly scarious, short-tomentose to glabrescent: scapes 12-18 cm. long, tomentose, narrower than the leaves: sheath 1.0-2.0 cm. long, briefly tomentose to glabrous, vesture when present is more dense toward the head: head hemispherical, 1.8-2.2 cm. wide: outer involucral bracts ovate-lanceolate, acute, slightly shorter than the inner ones, green along midsection, narrowly scarious, puberulent and rarely completely glabrous: inner involucral bracts ovate to ovate-oblong, obtuse, puberulent or sparingly pubescent, scarious toward apex: interfloral bracts usually pubescent, as long as calyx: spiculæ stipitate, peduncle 1.5-2.0 mm. long: pedicel 2.4-4.0 mm. long, distal spreading: calyces usually 6.0-7.0 mm. long; tube 2.5-3.1 mm. long, seemingly holotrichous with the vesture of the primary ribs much more dense than that of the secondary and connecting ribs; limb 3.2-3.8 mm. long; lobes rounded to nearly truncate, 0.8-1.1 mm. long with a distinct cusp

253. A DRAWING OF THE TYPE SPECIMEN OF *Armeria portensis*. Habit (× 1), single spicula (× 5) and the foveola (× 7½). Interfloral bracts of spicula not shown.

0.3-0.5 mm. long; spur absent, base of calyx narrowed, acute; foveola orbicular: corolla color not known.

Type: Buchtein, O., Lero, Porto, Portugal, May 1891. Deposited in the United States National Herbarium, under accession number 1,155,411. Named in honor of the provence of Porto, Portugal.

Armeria portensis differs from other species of the section Plagiobasis in having stipitate spiculæ and iinear uniform leaves, in the short obtuse-truncate calyx-lobes terminated by an exceedingly short cusp and in the spreading end of the pedicels. (See Fig. 253). This is also the only species of the group having puberulent to pubescent involucral and interfloral bracts.

The above description, dimensional limits and accompanying figure were based on the type collection.

31. **Armeria pubinervis** Boiss. in DC. Prod. xii, 688 (1848).

32. **Armeria leucocephala** Salzmann ex Koch, in Flora vi, 712 (1823).

Key to the varieties of *leucocephala:*

1. Leaves 1.5-2.5 cm. long, somewhat flaccid and limp, not erect: scape often declined and head lax; scapes usually 1.7-10 cm. long (rarely to 20 cm); heads 0.6-1.3 cm. across.
   2. Leaves glabrous (occasionally remotely villous along lower side of midrib), conspicuously glandular-punctate: corolla usually white; pedicel usually one-half as long as calyx-tube or less.
      3. Calyx-lobes long-attenuate, cusp 1.4-1.6 mm. long.....a. *typica*
      3. Calyx-lobes short and abruptly aristate, cusp 0.8-1.2 mm. long. b. var. *Kochii*
   2. Leaves finely and densely ciliate on margins and often pubescent on both surfaces.....c. var. *pubescens*
1. Leaves 3.0-12 cm. long, rigid and either erect or ascending, not flaccid: scape 10-28 cm. long; heads 1.2-2.2 cm. across.
   4. Plant glabrous (leaves occasionally remotely villous along lower side of midrib); corolla rose to white.....d. var. *procera*
   4. Plant with leaves pubescent (at least finely and densely so along margins): scape glabrous to tomentose: corolla white.....e. var. *Soleirolii*

a. **A. leucocephala,** typical element.

S. leucocephala Salzmann ex Koch, in Flora vi, 712 (1823).
S. leucantha Pouz. in Mem. Soc. Linn. Paris, iv, 560 (1826) and Lois., Fl. Gall. Ed. 2, i, 223 (1828).
A. leucocephala Salzm. ex Koch var. *alpina* Boiss. in DC. Prod. xii, 687 (1848).
A. Thomasii Nym., Conspect. p. 615 (1883).
S. leucocephala Hubb. ex Bailey, in Rhodora, xviii, 157 (1916).
A. leucocephala Koch var. *glabra* Bonnin pro parte in Bol. Soc. Bot. Franc. lxvii, 261 (1920).

† b. **A. leucocephala** var. **Kochii** stat. nov.

A. juniperifolia Willd. ex Hoffmgg. & Link sensu Koch, in Flora vii, 711 (1823), non Willd.
Koch received a plant from Salzmann which the latter had collected in the Corsican Mts. Koch identified this plant as Roemer & Schulte's *A. juniperifolia*, which is not distinct from Willdenow's *A. juniperifolia*. In synonymy Koch cited Vahl's *S. juniperifolia* and Cavanilles *S. cæspitosa*, hence he unquestionably believed the Corsican plant to be conspecific with the *A. juniperifolia* Willd. of the Iberian Peninsula and did not intend to create a new binomial as Boissier later (1848) cited him as having done.
A. Kochii Boiss. in DC. Prod. xii, 686 (1848).
Boissier considered the plant which Koch confused with *A. juniperifolia* as representing a distinct species and named it in Koch's honor.

A. leucocephala Salzmann ex Koch var. *multiceps* Fiori, Nuovo Fl. Ital. ii, 234 (1926), non Wallr.
Fiori confused Wallroth's plant of *A. multiceps* with Boissier's *A. Kochii*. The two are not based on the same specimen, nor are they alike. The former is *A. leucocephala pubescens*, while the latter is glabrous and with a slightly shorter pedicel, and here named var. *Kochii*.

† c. **A. leucocephala** var. **pubescens** trans. nov.
S. Armeria Linn. var. *pubescens* Salis. in Flora xvii, II, 13 (1834).
A. multiceps Wallr. Beitr. i, 196 (1844).
A. leucocephala Salzmann ex Koch var. *hirticula* Bonnin, in Bol. Soc. Bot. Franc. lxvii, 263 (1920).

d. **A. leucocephala** var. **procera** Boiss. in DC. Prod. xii, 687 (1848).
A. leucocephala Salzmann ex Koch var. *glabra* Fiori, Nuovo Fl. Ital. ii, 235,

e. **A. leucocephala** var. **Solerolii** Boiss.
S. Soleirolii Duby in DC. Bot. Gall. ii, 1032 (1830).
A. Soleirolii Godr. in Gren. & Godr., Fl. Franc. ii, 737 (1852).

33. **Armeria villosa** Gir. in Ann. Sci. Nat., ser III, ii, 323 (1844).

† 34. **Armeria Sennenii** spec. nov.

Planta cæspitosa; frutex arborescens, multiceps: foliis conformibus, lanceolatis, acutis, 5.0-7.5 cm. longis et 2.4-4.8 cm. latis, trinerviis, glabris, margine anguste scariosis: scapis 32-55 cm. longis et 1.5-3.5 mm. latis, erectis, glabris, valde glandulari-pustulatis: vaginae 1.8-2.6 cm. longae: capitulis sphericis, 1.5-2.0 cm. latis: involucri phyllis exterioribus lanceolatis ad ovatis, acuminatis vel cuspidatis, longioribus quam interiora, membranaceis infra medium: involucri phyllis interioribus latissime ovatis vel suborbicularibus, mucronatis, margine membranaceis: bracteolis inter-floralibus glabris, calicibus aequilongis: spiculis stipitatibus, pedunculis circa 0.6 mm. longis: pedicellis 0.6-1.4 mm. longis: calicis 4.8-5.9 mm. longis, tubo 1.9-2.4 mm. longo, pleurotricho, costis primis fere spissus pubescentibus quam coste secunde, costis transversis et intervallis glabris; lobis triangularibus, fere abrupte aristatis, arista 0.5-0.7 mm. longa; calcare nullo, calcium basibus acutis; foveola obovata: corolla color ignoto.

Plant cespitose, stem somewhat woody, multicipital: leaves alike, lanceolate, acute, 5.0-7.5 cm. long and 2.4-4.8 cm. wide, 3-nerved, glabrous, margins narrowly scarious: scapes 32-55 cm. long and 1.5-3.5 mm. wide, erect, glabrous, strongly glandular-pustulose: sheath 1.8-2.6 cm. long: head spherical, 1.5-2.0 cm. wide: outer involucral bracts lanceolate to ovate, acuminate or cuspidate, longer than the inner ones, membranous along the basal half: inner involucral bracts broadly ovate to suborbicular, mucronate, margins membranaceous: interfloral bracts glabrous, as long as the calyx or nearly so: spiculæ stipitate, peduncle about 0.6 mm. long: pedicels 0.6-1.4 mm. long: calyces 4.8-5.9 mm. long; tube 1.9-2.4 mm. long, pleurotrichous, primary ribs usually more densely pubescent than secondary ones, connecting ribs and intercostal spaces glabrous; lobes triangular, usually abruptly aristate; cusp 0.5-0.7 mm. long; spur absent, base of calyx acute; foveola obovate: corolla color not known.

Type: Sennen Fr., Marges Ardagna, Spain, July 23, 1927. Deposited in the herbarium of the Academy of Natural Sciences, Philadelphia, under the accession number 673,396. Named in honor of the late Frere Sennen.

This species was distributed by Fr. Sennen under the herbarium name of *Armeria coarctata*. It is characterized by its short glabrous lanceolate uniform leaves, the stout scapes and stipitate spiculæ. Only the type specimen has been seen.

35. **Armeria Morisii** Boiss. in DC. Prod. xii, 687 (1848).

Key to the varieties of *Morisii:*

1. Foveola obovate, distal end of pedicel not spreading.
   2. Pedicel as long as calyx-tube or less: leaves 2-10 cm. long: scape 12-40 cm. long.
      3. Leaf margin narrowly membranaceous, very finely and bluntly denticulate: pedicel about as long as tube: interfloral bracts usually herbaceous.....a. *typica*

3. Leaf margin narrowly membranaceous, entire: pedicel usually distinctly shorter than the calyx-tube: interfloral bracts usually membranaceous.....b. var. *macropoda*

2. Pedicel longer than calyx-tube: leaves 10-20 cm. long: scape usually 40-60 cm. long.....c. var. *macropoda*

1. Foveola nearly circular, distal end of pedicel distinctly convex and spreading .....d. var. *maderensis*

a. **A. Morisii,** typical element.

S. cephalotes Ait. sensu Bertol., Fl. Ital. iii, 511 (1805).
A. Morisii Boiss. in DC. Prod xii, 687 (1848).
A. Morisii Bois. var. *typica* sensu Fiori, Nuovo Fl. Ital. ii, 234 (1926).

b. **A. Morisii** var. **Gussonei** Parlatore, Fl. Ital. viii, 600 (1886).

S. cephalotes Ait. sensu Bertol., Fl. Ital. iii, 511 (1805), quod plant. Sicula.
A. Gussonei Boiss. in DC. Prod. xii, 687 (1848).

c. **A. Morisii** var. **macropoda** Parlatore, Fl. Ital. viii, 600 (1886).

A. macropoda Boiss. in DC. Prod. xii, 688 (1848).

† d. **A. Morisii** var. **maderensis** stat. nov.

A. maderensis Lowe ex Boiss. in DC. Prod. xii, 688 (1848).

Species unknown or unaccounted for

**A. atlantica* Pomel, Nouv. Mat. Fl. Atl. p. 104 (1874).
A. carpetana Villar, in Bol. Soc. Espan. Hist. Nat. xvi, 404 (1916).
**A. Choulettiana* Pomel, Nouv. Mat. Fl. Atl. p. 135 (1874).
A. colorata Pau, in Mem. Mus. Cienc. Nat. Barcel. Ser. Bot., i, 66 (1922).
**A. ebracteata* Pomel, Nouv. Mat. Fl. Atl. p. 132 (1874).
**A. fibrosa* Pomel, l.c.
A. Grosii Pau, in Mem. Mus. Cienc. Nat. Barcel. Ser. Bot. i, 67 (1922).
**A. lachnolepis* Pomel, Nouv. Mat. Fl. Atl. p. 133 (1874).
A. lacmonica Hausskn. in Mitth. Thuring, Bot. Var. n.s. x, 55 (1900).
**A. longevaginata* Batt. in Batt. & Traub., Fl. d'Algiers, p. 738 (1890).
A. miscella Merino, Fl. Galicia iii, 584 (1906).
A. neglecta Gir. in Ann. Sci. Nat. ser III, ii, 324 (1844).
A. trachyphylla Lange, in Danske Vidensk. Selsk. Forh. p. 199 (1893).

---

* Species native of North Africa, of which insufficient material has been available to permit incorporation in this treatment. These plants are closely related to *Armeria plantaginea* Willd. and may not be specifically distinct from it.